



# MILITARY HEALTH SYSTEM RESEARCH SYMPOSIUM

18-21 August 2014  
Fort Lauderdale, FL

**SYMPOSIUM GUIDE**

**#MHSRS**



## THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1200

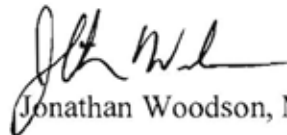
### HEALTH AFFAIRS



Dear MHSRS Attendee:

Welcome to the 2014 Military Health System Research Symposium (MHSRS)! The MHSRS is the Department of Defense's (DoD), and the nation's, only scientific meeting completely focused on the unique medical needs of the Warfighter. Over the years, the MHSRS has served to accelerate collaboration among military medical care providers with deployment experience, DoD scientists, academia, and industry in order to meet the life-saving needs of battlefield medicine.

This year we received a record number of abstracts! As in past years, many of the nation's premier medical scientists will present their research results either in scientific sessions or in posters. All of these efforts have one focus – to improve our support and care of the Warfighters! I hope you enjoy the conference and take full advantage of the presentations and discussions.

  
Jonathan Woodson, M.D.



August 17, 2014

Welcome to Fort Lauderdale!

Thank you for selecting our City as the site for the 2014 Military Health System Research Symposium on August 18-22, 2014. As you'll soon discover, Fort Lauderdale offers endless opportunities for fun and excitement.

Our world-famous beach and 165 miles of scenic waterways make us the perfect location for every type of water activity imaginable. Enjoy deep-sea fishing, scuba diving, windsurfing and jet skiing, or sail up the New River as you take in the City's sights aboard a water taxi or the legendary Jungle Queen Riverboat.

If arts and culture are what you desire, head to downtown's Riverwalk Park, home to world-class theatre, music, dance and fine arts. Awaiting you are Broadway musicals and concerts at the Broward Center for the Performing Arts, modern and contemporary art collections at the Museum of Art, and more than 200 interactive exhibits at the Museum of Discovery and Science. Our City's history comes to life before your very eyes at Old Fort Lauderdale Village and Museum, which features buildings that date back to the days of the City's earliest pioneers.

When the sun goes down, Fort Lauderdale's nightlife heats up. Las Olas Boulevard and Himmarshee Village feature award-winning restaurants, bistros and sidewalk cafes along with clubs and venues offering entertainment options to suit everyone's tastes. For a truly romantic evening, climb aboard an authentic Venetian gondola for a one-of-a-kind tour of the majestic waterways that gave rise to Fort Lauderdale's designation as the "Venice of America."

Whether it's Riverwalk, Las Olas Boulevard, Himmarshee Village or the beach, no other City offers you the chance to do so much or, if you prefer, so little.

Enjoy your stay in Fort Lauderdale and make sure to visit us again soon.

Very truly yours,



John P. "Jack" Seiler  
Mayor



# SYMPOSIUM INFORMATION

## SYMPOSIUM BADGES

Symposium badges must be worn at all times. There are NO EXCEPTIONS.

## FAMILY MEMBERS & GUESTS

Family members are not allowed into the Symposium activities or on the shuttles unless registered as an attendee.

## POSTER SESSIONS

There will be two poster sessions on Tuesday, 19 August. These will be held on the “B” Level at the Marriott.

### SESSION 1: 1300-1500

Set-Up: 1100-1200

Removal: 1500-1600

### SESSION 2: 1800-2000

Set-Up: 1600-1700

Removal: 2000-2030

Posters not removed will be discarded.

## SYMPOSIUM MEALS

Breakfast and Lunch will be served Monday-Thursday. Dinner will be served on Monday as part of the Assistant Secretary of Defense (Health Affairs) Reception in the Grand Ballroom. *Please note: Military and GS Employees, this is considered a meal to be reflected on your travel voucher. Meals are for registered attendees only.*

## TAX EXEMPT FORMS

There will be tax exempt forms available at the Special Requests desk at Symposium Registration.

## REGISTRATION

Located in the Foyer outside of the Grand Ballroom.

## HOURS OF OPERATION

Sunday, 17 August: 0700-1900

Monday, 18 August: 0700-1800

Tuesday, 19 August: 0700-1800

Wednesday, 20 August: 0700-1800

Thursday, 21 August: 0700-1530

## IMPORTANT PHONE NUMBERS

MHSRS Information Desk: (877) 784-9303

Shuttle Information: (957) 650-9366

## SHUTTLE SERVICE

Shuttle service is for registered MHSRS attendees only. From Sunday–Thursday, shuttle service will be provided to and from the Ft. Lauderdale airport for the following hotels: Harbor Beach Marriott, Sheraton Ft. Lauderdale Beach, Hilton Marina, Bahia Mar DoubleTree, and the Westin Ft. Lauderdale Beach. Shuttle service will also be provided between the hotels starting at 0600 Monday–Thursday. A complete shuttle schedule will be available at the Registration Desks.

## AUDIO/VIDEO RECORDING

The use of audio/video devices to record any portion of the Symposium is expressly banned. Violation of this policy may result in ejection from the Symposium and forfeiture of registration fees.



## CONTINUING MEDICAL EDUCATION (CME)

This activity offers CE credit for:

1. Physicians (CME)
2. Nurses (CNE)
3. Psychologists (APA)

All other clinicians either will receive a CME Attendance Certificate or may choose any of the types of CE credit being offered.

## STATEMENT OF NEED

This annual event provides an academic-based venue to discuss and distribute new scientific knowledge resulting from military-unique research and development. In addition, it provides a scholarly forum for planning and development of future studies aimed at optimizing care for members of the Uniformed Services in operational settings.

Military and civilian medical clinicians, scientists and researchers will present their latest research results on a variety of topics including:

- > Traumatic brain injury diagnosis and treatment
- > Mental health care, including diagnosis and treatment of post-traumatic stress disorder and suicide prevention
- > Hemorrhage control
- > Advancements in treating traumatic wounds, including rehabilitation and prosthetics
- > Infection control, including multi-drug resistant infections
- > Emerging opportunities in regenerative medicine

## LEARNING OBJECTIVES

At the end of this CE activity, participants should be able to:

- > Translate current and emerging scientific evidence into clinical practice and individualized care decisions for members of the Uniformed Services in operational settings;
- > Actively participate in discussions with experts, interdisciplinary team members, and colleagues regarding the challenges in daily clinical practice so that new insights can be applied to improve patient care;
- > Describe best practices for diagnosis of, treatment of, and/or advances in traumatic brain injury, mental health care, hemorrhage control, infection control, regenerative medicine, traumatic wounds, including rehabilitation and prosthetics.

## TARGET AUDIENCE

Attendees include military medical care providers with deployment experience, DoD scientists, educators, and industry leaders involved in medical training and health information sciences research.

## CREDIT INFORMATION

**CME Credit (Physicians):** This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of CME Outfitters, LLC, and Isom Global Strategies. CME Outfitters, LLC, is accredited by the ACCME to provide continuing medical education for physicians. CME Outfitters designates this live activity for a maximum of 32 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**CNE Credit (Nurses):** Provider approved by the California Board of Registered Nursing, Provider Number CEP 15510, for 32 contact hours.

**CEP Credit (Psychologists):** Commonwealth Educational Seminars is approved by the American Psychological Association to sponsor continuing education for psychologists. Commonwealth Educational Seminars maintains responsibility for this program and its content. (25.0 CE credits)





## **DISCLOSURE DECLARATION**

It is the policy of CME Outfitters, LLC, to ensure independence, balance, objectivity, and scientific rigor and integrity in all of their CME/CE activities. Faculty must disclose to the participants any relationships with commercial companies whose products or devices may be mentioned in faculty presentations, or with the commercial supporter of this CME/CE activity. CME Outfitters, LLC, has evaluated, identified, and attempted to resolve any potential conflicts of interest through a rigorous content validation procedure, use of evidence-based data/research, and a multidisciplinary peer review process. Please see a full list of presenter disclosures at the Registration Desk.

## **UNLABELED USE DISCLOSURE**

Faculty of this CME/CE activity may include discussions of products or devices that are not currently labeled for use by the FDA. The faculty have been informed of their responsibility to disclose to the audience if they will be discussing off-label or investigational uses (any uses not approved by the FDA) of products or devices. CME Outfitters, LLC, the faculty, and Sunovion do not endorse the use of any product outside of the FDA-labeled indications. Medical professionals should not utilize the procedures, products, or diagnosis techniques discussed during this activity without evaluation of their patient for contraindications or dangers of use.

## **CLAIMING CREDITS**

In order to qualify for credits, we require you sign in at each eligible session. Starting on Friday, 22 August, you can visit: [www.cmeoutfitters.com/IG001](http://www.cmeoutfitters.com/IG001). Once you follow the step-by-step guide, you will receive a PDF file that contains your credit certificate. This certificate is suitable for printing.

Questions about this activity? Call us at 877-CME-PROS (877-263-7767).



# AGENDA: SUNDAY, 17 AUGUST

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
0900-1615		Air Force Medical Service Breakout	0900-1200 - AFMS Business Meeting 1330-1615 - Scientific Presentations	Ocean 2/4



# AGENDA: MONDAY, 18 AUGUST

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
0700-0800		Breakfast		Grand/ Ocean 3030/ Oceanview Terrace
0800-0815		<b>Welcome &amp; Administrative Remarks</b>	<b>Moderators</b> <b>Terry Rauch, PhD</b> <b>COL Dallas Hack, USA</b>	<b>Ocean Ballroom</b>
0815-0841		<b>Keynote Presentation</b>  <b>Advancing the Practice of Military Medicine</b>	<b>Dr. David J. Smith</b> <b>Deputy Assistant Secretary of</b> <b>Defense for Force Health</b> <b>Protection and Readiness</b>	
0841-0907		Military Health System: RDA Transformation	Lt Gen Douglas J. Robb, USAF Director Defense Health Agency	
0907-0933		The DHA Research, Development, and Acquisitions Directorate: Update on Activities and Path Forward	Rear Admiral Bruce A. Doll, USN Director, Research, Development & Acquisition Defense Health Agency	
0933-1000		“Skating To Where the Puck Will Be”	Vice Admiral Matthew T. Nathan Surgeon General of the Navy	
1005-1030		Break		
1030-1200		<b>Joint Trauma System Presentation &amp; Panel Discussion</b>	<b>Moderator</b> <b>COL Kirby Gross, USA</b>	<b>Ocean Ballroom</b>
	1030-1040	Clinical Questions to Clinical Guidance: The Military’s Continuously Learning System in Trauma	Rasmussen	
	1040-1110	Products and Functional Means by Which JTS-JTTS Impact Combat Casualty Care Outcomes	Gross	
	1110-1200	Panel Discussion	Bailey, Gross, Stockinger, Butler, Geracci, Mabry, Nohrenberg, Spott, Shireman, Rice, Glassberg	
1200-1300		Lunch		Grand/ Ocean 3030/ Oceanview Terrace
1300-1500		Breakout Sessions		
		<b>Training &amp; Skills Sustainment</b> <b>Combat Casualty Simulation &amp; Training</b>	<b>Moderator</b> <b>Janet Harris, PhD</b>	<b>Ocean 1</b>
	1300-1315	Overview of the Combat Casualty Training Initiative Strategic Plan	Harris	
	1315-1330	Difficult Airway Management for Novice Physicians: A Randomized Trial Comparing Direct and Video-Assisted Laryngoscopy	Ambrosio	



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	1330-1345	Recognition and Treatment of Nerve Agent Casualties: Evidence of Reduced Learner Engagement During Video Based Training	Bukoski	
	1345-1400	Just in Time Learning is Effective in Helping First Responders Manage Weapons of Mass Destruction Events	Motola and Burns	
	1400-1415	Medical Simulations and Training: Defining Requirements from Frontline SOF Medical Providers to Influence Simulation Development with the Goal of Reducing Capability Gaps for Future Conflicts	Bowling	
	1415-1430	A Comparison of Two Medical Training Modalities for CAF Medical Technicians: Live Tissue Training and High Fidelity Patient Simulator	Savage	
	1430-1445	Bridging Combat Causality Burn Care Education with High Fidelity Human Patient Simulation	Hayes	
	1445-1500	Event Driven Surgical Gesture Recognition: Test and Performance Comparison	De Novi	
		<b>Trauma Care - Enroute Care</b>	<b>Moderators</b> <b>Lt Col Jennifer Hatzfeld, USAF</b> <b>Lt Col Vikhyat Bebarta, USAF</b>	<b>Ocean 2</b>
	1300-1315	Prehospital Blood Transfusions During Aeromedical Evacuations of Trauma Patients in Israel	Chen	
	1315-1330	Flow Cytometry Analysis of Myeloid Cells After Crush Injury and Simulated Flight	Schneider	
	1330-1345	Utility of Vital Signs, Heart-Rate Variability and Complexity, and Machine Learning for Identifying the Need for Life-Saving Interventions in Trauma Patients	Liu	
	1345-1400	Predicting Blood Transfusion Using Automated Analysis of Pulse Oximetry Waveforms and Lab Values	Shackleford	
	1400-1415	Can an Intelligent Alerting System Identify Patients with Substantial Bleeding during Transport to a Trauma Center?	Reisner	
	1415-1430	En route Use of Parenteral Opioids, Ketamine, and Epidural Analgesia to Treat Pain in Patients Transported out of the Combat Theater by US Air Force Critical Care Air Transport Teams (CCATT)	Ervin	
	1430-1445	Biological Effects of Vibration Simulating Helicopter Transport on Spinal Cord Injured Pigs	Cripton	

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	1445-1500	Pressure Ulcer Development in Critical Care Air Transport Team Patients: A Case-Control Study	Dukes	
		<b>Trauma Care - Blood/Blood Products</b>	<b>Moderator Heather Pidcoke, MD, PhD</b>	<b>Ocean 3</b>
	1300-1312	Thrombus Formation and Platelet Adhesion: A Quantitative System to Evaluate Platelet Function in vivo	Torres Filho	
	1312-1324	Platelets Modulate Vascular Stability in Trauma and Hemorrhage: Assessing the Donor Variability and the Storage Lesion of Platelets	Pati	
	1324-1336	Magnesium Sulfate Supplementation Promotes the Response of Cold Stored Platelets to Aggregation and Coagulation Stimuli Over Eight Days	Meledeo	
	1336-1348	4°C Platelet Storage Reduces Reactive Oxygen Species, Preserves Mitochondrial Function, and Reduces Fibrinolysis	Bynum	
	1348-1400	Syndecan-1 Mediated Gut Protection by Fresh Frozen and Lyophilized Plasma After Hemorrhagic Shock	Kozar	
	1400-1412	A Freeze Dried Plasma Alternative to Fresh Frozen Plasma with Improved Handling to Enable Point-of-Injury Care	Pareta	
	1412-1424	UPDATE - Clinical Development of a Spray Dried Solvent Detergent Treated Plasma	Galiger	
	1424-1436	Whole Blood Treated with Riboflavin and UV Light: Inactivation of Malaria Parasite and Blood Conservation at 4°C	Goodrich	
	1436-1448	Blood Product Resuscitation Is Not Hemostatic In Trauma Patients Undergoing Surgical Debridement	Pidcoke	
	1448-1500	The Evolution of Pediatric Combat Transfusion Practice	Cannon	
		<b>Psychological Health &amp; Rehabilitation &amp; Recovery Sensory Issues - Vision, Hearing &amp; Balance</b>	<b>Moderators CAPT Michael Hoffer, USN, Lynn Henselman, PhD, LTC James Crawford, USA</b>	<b>Ocean 4</b>
	1300-1303	Introduction	Hoffer, Henselman, and Crawford	
	1303-1316	A New ANSW2R to the Problem of Neurosensory Polytrauma	Packer	
	1316-1329	Restoration of Sight with Photovoltaic Sub-Retinal Prosthesis	Palanker	
	1329-1342	Warfighter Performance and Hearing Preservation: Achieving the Synergy	Yankaskas	

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	1342-1355	Evaluation of Aurally-Aided Visual Search Performance for Individuals Maneuvering on Foot	Brungart	
	1355-1408	Military Medical Research Intelligence: Requirements and Solutions	Packer	
	1408-1421	Evaluation and Treatment of Single Sided Deafness	Boudin	
	1421-1434	Update on Vestibular Evaluation and Treatment	Esquivel	
	1434-1447	Tinnitus Re-Organization Training: Combining Modulated Music with Transcutaneous Vagal Nerve Stimulation to Alleviate Combat-Related Tinnitus	Lewine	
	1447-1500	Translational Research: From the Bench to the Battlefield	Balaban	
1500-1530		Break		
1530-1730		Breakout Sessions		
		<b>BioInformatics - Supporting Warrior Care</b>	<b>Moderators Francis McVeigh, OD Lori Loan, PhD</b>	<b>Ocean 1</b>
	1530-1536	Introduction	McVeigh and Loan	
	1536-1555	The Impact of a Mobile Messaging System on Case Management Assessment, Contact Rate Requirements and Appointment Reminder Support	Pavlisacsak	
	1555-1614	A Concept Recognition Tool to Identify the Surgical Complications of Crohn's Disease in Electronic Health Records	Dunn	
	1614-1633	Improving Human Computer Interaction in Electronic Medical Records through Design and Data Visualization	Kang	
	1633-1652	Developing a Cognitive and Communications Tool for Burn ICU Clinicians	Nemeth	
	1652-1711	A Large-scale mTBI Informatics Database: Fostering Innovation, Research, and Development for mTBI/PTSD	Caban	
	1711-1730	COPTADS: Clinical Online PTSD and TBI Analysis and Detection System	Kagan	
		<b>Trauma Care - Hemorrhage Control &amp; Resuscitation</b>	<b>Moderators Michael Dubick, PhD CAPT Zsolt Stockinger, USN</b>	<b>Ocean 2</b>
	1530-1531	Introduction	Dubick and Stockinger	
	1531-1548	Junctional Hemorrhage Control: Update on Out-of-Hospital Interventions	Kragh	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1548-1605	Pre-Hospital Use Of Hemostatic Bandages By The Israeli Defense Force Medical Corps. A Report Of 31 Cases.	Glassberg	
	1605-1622	Aortic Hemostasis and Resuscitation: Sequential Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) and Selective Aortic Arch Perfusion (SAAP) in a Swine Model of Severe Hemorrhage and Cardiac Arrest	Manning	
	1622-1639	FFP and SDP Mitigate the Endotheliopathy of Hemorrhagic Shock (HS) and Trauma Associated Acute Lung Injury (ALI)	Pati	
	1639-1656	A Controlled Resuscitation Strategy is Feasible and Safe in Hypotensive Trauma Patients: Results of a Prospective Randomized Pilot Trial	Schreiber	
	1656-1713	Pre-Hospital Blood Products After Battlefield Trauma: Benefit Unclear	Smith	
	1713-1730	Does TXA Matter? Refining Indications for its Use in the Combat Trauma Population	Stockinger	
		<b>Psychological Health &amp; Rehabilitation &amp; Recovery Psychological Health - Post Traumatic Stress Disorder in Primary Care Settings</b>	<b>Moderator Ronald Hoover, PhD</b>	<b>Ocean 3</b>
	1530-1600	Collaborative Primary Care for Depression and PTSD in the U.S. Military Health System: Design and Early Findings from STEPS UP, a Multisite Randomized Effectiveness Trial	Engel	
	1600-1630	Neuropsychiatric Diagnoses Associated with Genitourinary Injury in Male Veterans of OEF/OIF Receiving Care at Veterans Administration Health Care Facilities	Orman	
	1630-1700	Impact of Posttraumatic Stress Disorder and Inflammation on Somatic Symptoms: A Cross-Sectional Analysis of Combat-Exposed Service Members	Burson	
	1700-1730	Virtual-Reality Exposure Therapy for Combat-Related PTSD: Examination of Perceived Contraindications and Iatrogenic Effect Trajectories	Beidel	
		<b>Psychological Health &amp; Rehabilitation &amp; Recovery Prosthetics &amp; Rehabilitation</b>	<b>Moderators CAPT Lanny Boswell, USN Ms. Katherine Stout, DPT, MBA</b>	<b>Ocean 4</b>
	1530-1535	Introduction	Boswell and Stout	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1535-1558	Monitoring Energy Expenditure in Amputees: A Prosthetic-Integrated Wearable Sensor System	Krepkovich	
	1558-1621	A Bionic Ankle Prosthesis, Odyssey, Restores Powered Push-Off During Walking and Running for Transtibial Amputees	Ward	
	1621-1644	Towards Clinically Viable Neural Control of Powered Lower-Limb Prostheses	Fey	
	1644-1707	Using Multiple High-Count Electrode Arrays in Residual Arm Nerves to Restore Sensorimotor Function After Hand Amputation	Clark	
	1707-1730	Blood Flow Restricted Training as a Rehabilitation Modality: A Case Series	Hayden	
1900-2100		<b>Assistant Secretary of Defense (Health Affairs) Reception</b>		<b>Grand Ballroom</b>

# AGENDA: TUESDAY, 19 AUGUST

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
0700-0800		Breakfast		Grand/ Ocean 3030/ Oceanview Terrace
0800-0805		<b>Administrative Remarks</b>	<b>Moderator</b> Col Todd Rasmussen, USAF	<b>Ocean Ballroom</b>
0805-0830		<b>Keynote Presentation</b>  <b>Sustaining Innovation and Excellence in Military Medicine--The Challenge of Contingency</b>	<b>Brigadier Timothy J. Hodgetts, CBE, PhD, MMed, MBA Medical Director, Joint Medical Command</b>	
0830-0845		Comparing Live Animal & Simulator Alternatives for Training & Assessing Hemorrhage & Airway Procedures in a Tactical Field Situation	Robert M. Sweet, MD, FACS University of Minnesota Minneapolis, MN	
0845-0900		Hypoxemia During Aeromedical Evaluation of the Walking Wounded	Col Jay Johannigman, USAFR, MD University of Cincinnati Cincinnati, OH	
0900-0915		A Retrospective Study of Hearing Thresholds of Acoustic Trauma Patients from OEF/OIF in 2009	LTC D. Scott McIlwain, Au.D. U.S. Army Aeromedical Research Laboratory Ft. Rucker, AL	
0915-0930		Storage of Platelets at 4° in Platelet Additive Solutions Prevents Aggregate Formation & Preserves Platelet Functional Responses	Todd M. Getz, PhD U.S. Army Institute of Surgical Research Fort Sam Houston, TX	
0930-1000		Break		
1000-1200		Young Investigator Competition	<b>Moderator</b> David Baer, PhD	Ocean Ballroom
	1000-1010	<b>Competitive Abstract MHSRS-761</b> Emerging Role of Blood Biomarkers in TBI Clinical Trials: Initial Findings from the Phase II INTREPID2566 Trial	Mondella	
	1010-1020	<b>Competitive Abstract MHSRS-828</b> Evaluation of High-Dose Hydroxocobalamin and Ascorbic Acid as an Injectable Antidote for Carbon Monoxide Poisoning	Roderique	
	1020-1030	<b>Competitive Abstract MHSRS-775</b> Moderate and Severe Brain Injury Among Combat Casualties: Secondary Insult Analysis	Keen	
	1030-1040	<b>Competitive Abstract MHSRS-402</b> Effectiveness of an Injury Prevention Warm-Up for Unit Physical Training	Shumway	



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	1040-1050	<b>Competitive Abstract MHSRS-900</b> Nebulized Epinephrine Limits Pulmonary Vascular Hyperpermeability to Water and Proteins in Ovine Burn and Smoke Inhalation Injury	Lopez	
	1050-1100	<b>Competitive Abstract MHSRS-1012</b> Improved Clot Strength of Refrigerated Platelets for Transfusion	Nair	
	1100-1110	<b>Competitive Abstract MHSRS-340</b> Can We Predict How Sleep Loss Impairs Human Performance?	Ramakrishnan	
	1110-1120	<b>Competitive Abstract MHSRS-422</b> In-Theater mTBI Screening: Normative Versus Baseline ANAM4 Data	Haran	
	1120-1130	<b>Competitive Abstract MHSRS-56</b> A Novel Anatomical and Physiological Scoring System for Military Pelvic and Perineal Blast Injuries Shows Significantly Superior Predictive Outcomes Than Current Scoring Systems; Injury Severity score-ISS, New ISS, Trauma ISS, Revised Trauma Score	Mossadegh	
	1130-1140	<b>Competitive Abstract MHSRS 351</b> The Adrenal Response to Injury in Mauritian Cynomolgus Macaques: A Comparison Between Isolated Hemorrhage and Polytrauma Models	Nelson	
	1140-1150	<b>Competitive Abstract MHSRS-963</b> Porcine Large Total Body Surface Area (TBSA) Contact Burn for Investigating Immunomodulators to Reduce Systemic Inflammatory Response Syndrome (SIRS)	Burmeister	
	1150-1200	<b>Competitive Abstract MHSRS-52</b> Design and Development of a Controlled Spinal Cord Impactor for Use in Large Animal Models of Acute Traumatic Spinal Cord Injury	Petteys	
1200-1300		Lunch		Grand/ Ocean 3030/ Oceanview Terrace
1215-1400		<b>Lunchtime Breakout Session Hyperbaric Oxygen Therapy (HBO2) for mild Traumatic Brain Injury (mTBI) DoD Research Project</b>	<b>Moderator CDR Rene Hernandez, USN</b>	<b>Ocean 2/4</b>
	1215-1220	Introduction	Chhoeu	
	1220-1235	Overview of DoD's HBO2 Program: Results of USAF and Navy/VCU Studies	Weaver	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1235-1250	Pilot Study: Hyperbaric Oxygen for Persistent Post-Concussive Syndrome after mTBI	Miller	
	1250-1305	Day to Day Operations of the HBO2 Studies: Lessons Learned and Path Forward	Price	
	1305-1320	Current and Future DoD HBO2 studies	Weaver	
	1320-1400	Panel Discussion and Posters	All Speakers	
1300-1500		Poster Session 1		Level B
1500-1530		Break		
1530-1730		Breakout Sessions		
		<b>Training &amp; Skills Sustainment Military Medical Skills Acquisition &amp; Sustainment</b>	<b>Moderators Mr. Harvey Magee Lori Loan, PhD</b>	<b>Ocean 1</b>
	1530-1538	Overview of the Medical Practice Initiative Strategic Plan	Kunkler	
	1538-1554	Effectiveness of Hemodynamics Simulator in Teaching Notice Trainees the Treatment of Shock	Laufer	
	1554-1610	Training and Retention Outcomes from Two Forms of Pediatric and Neonatal Intubation Training	Dooley-Hash	
	1610-1626	Can Performance be Predicted Early On?	Kang	
	1626-1642	Alternative Approach to Establish Inter-Rater Concordance	Baez	
	1642-1658	Preparing Surgeons for Modern Combat Trauma Care: Experience with the Advanced Surgical Skills for Exposure in Trauma (ASSET) Course for Pre-Deployment Training	Bowyer	
	1658-1714	Development of a Trauma Readiness Metric Score for Surgeons	Mackenzie	
	1714-1730	Retention and Retraining of Integrated Cognitive and Psychomotor Surgical Skills	Skinner	
		<b>Psychological Health &amp; Rehabilitation &amp; Recovery Psychological Health - Resilience</b>	<b>Moderators LTC Dennis McGurk Michael C. Freed, PhD</b>	<b>Ocean 2</b>
	1530-1535	Introduction	McGurk & Freed	
	1535-1558	Comprehensive Soldier and Family Fitness (CSF2) Program Evaluation Initiatives	Nannini	
	1558-1621	Annual Fitness Test Performance and Mental Health Outcomes in US Marines	Bartlett	
	1621-1644	Attracting Substance Abusing Soldiers to Voluntarily Take Stock of Their Use: Preliminary Outcomes From the Warrior Check-Up MET Intervention	Walker	

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	1644-1707	Post-Deployment Issues of National Guard: A Comparative Case Study of How Access to VA Benefits Affect Reintegration with Family and Civilian Employment	Gorman	
	1707-1730	Discussant Comment & Discussion	McGurk & Freed	
		<b>Physiological Monitoring</b>	<b>Moderators Victor Convertino, PhD Jaques Reifman, PhD</b>	<b>Ocean 3</b>
	1530-1550	Can Prehospital Vital Signs Help Identify Traumatic Brain Injury?	Reisner	
	1550-1610	Utility of a Near-Infrared Reflectance Spectroscopy Oximeter in Shock	Wood	
	1610-1630	Cardiac Output Monitoring Managing Intravenous Therapy (COMMIT) to Resuscitate Emergency Department Severe Sepsis	Shapiro	
	1630-1650	Wearable Sensing and Machine Learning for Human Physical Activity Assessment	Liu	
	1650-1710	Characterization of the Changes in Compensatory Reserve Index During Major Bleeding in Porcine Model	Glassberg	
	1710-1730	Laser Speckle-Based Microvascular Blood Flow Monitoring for Critical Care	Ostraverkhov	
1530-1800		<b>Expeditionary &amp; Sea Based Care &amp; Global Disaster Response</b>	<b>Moderators Wayman Cheatham, MD Lt Col Elon Glassberg, IDF</b>	<b>Ocean 4</b>
	1530-1535	Introduction	Cheatham and Glassberg	
	1535-1600	Operations Unified Response and Pacific Partnership - Lessons Identified and Needed Capabilities	Johnson	
	1600-1625	Experience and Lessons Learned During Israeli Defense Force Humanitarian Medical Missions	Glassberg	
	1625-1640	Extending a Helping Hand Over a Hostile Border –Unique Ethical Dilemmas Involving the Humanitarian Aid Mission to the Victims of the Syrian Civil War	Nadler	
	1640-1656	Differential Impact of General and Deployment-Specific Stressors on Marines' Mental Health Outcomes	McWhorter	
	1656-1712	Ratio Driven Resuscitation Predicts Early Fascial Closure in The Combat Wounded	Glaser	
	1712-1728	Exploratory Laparotomy for Proximal Vascular Control Is Associated With Significant Morbidity In Combat Trauma	Glaser	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1728-1744	Medical Evacuations from the United States Navy Submarine Fleet: January 2012 through December 2013	Welsh	
	1744-1800	The Potential of Portable Oxygen Concentrators to Provide Oxygen for Remote Diving Casualties	Fothergill	
1800-2000		Poster Session 2		Level B
1900-2100		<b>U.S. Navy/Marine Corps Service Breakout</b>		<b>Ocean 2</b>

# AGENDA: WEDNESDAY, 20 AUGUST

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
0700-0800		Breakfast		Grand/ Ocean 3030/ Oceanview Terrace
0800-0805		<b>Administrative Remarks</b>	<b>Moderator Woodson Scott Jones, MD</b>	<b>Ocean Ballroom</b>
0805-0830		<b>Keynote Presentation</b> <b>"That's a crazy idea...."</b>	<b>Charles L. Rice, MD</b> <b>President, Uniformed Services</b> <b>University of the Health Sciences</b>	
0830-0845		Safe, Effective, and Secure Medical Products - New Ways of Collaborating with the Food and Drug Administration	Suzanne Schwartz, MD MBA Director Emergency Preparedness/Operations and Medical Countermeasures, Office of the Center Director, Center for Devices and Radiological Health Food and Drug Administration	
0845-0900		Improved Survival in UK Combat Casualties From Iraq and Afghanistan: 2003-2012'	Surgeon Lieutenant Commander Jowan G Penn-Barwell Royal Navy	
0900-0915		Fall Prevention Training for Warfighters w/ Lower Extremity Amputations	Kenton R. Kaufman, PhD, PE Mayo Clinic Rochester, MN	
0915-0930		Tactical CCC Guidelines Recommending Hetastarch Use at POI Do Not Require Revision	COL Kirby R Gross, USA, MD Joint Trauma System San Antonio, TX	
0930-0945		The Power of Mobile: Enabling the Medical War Fighter Today and in the Future	COL Daniel R. Kral, USA, MS Telemedicine and Advanced Technology Research Center Ft Detrick, MD	
0945-1000		Early In-Theatre Management of Combat Related TBI: A Prospective, Observational Study to Identify Opportunities for Performance Improvement	Col Raymond Fang, USAF, MD US Air Force Center for Sustainment of Trauma and Readiness Skills Baltimore, Maryland	
1000-1030		Break		
1030		<b>Administrative Remarks</b>	<b>Moderator Ronald Hoover, PhD</b>	<b>Ocean Ballroom</b>
1030-1045		Cerebral Glucose Metabolism During Wake & Sleep Predicts Response to Praosin in Military Veterans with PTSD	Anne Germain, PhD University of Pittsburgh Pittsburgh, PA	
1045-1100		Impact of Anemia in Critically Ill Burned Casualties Evacuated From Combat Theatre Via CCATT	Maj Joshua A. Hamilton, USAF, MD San Antonio Uniformed Services Health Education Consortium San Antonio, TX	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
1100-1115		Sexual Trauma & Adverse Health & Military Occupational Outcomes of Women Serving in the US Military	LDCR Jeffrey Millegan, MD, PhD, USN Naval Medical Center San Diego San Diego, CA	
1115-1130		Pathobiology of Impact Concussion & Sequelae in a Mouse Model of mTBI	Lee Goldstein, MD NIH Alzheimer's Disease Center Boston University Boston, MA	
1130-1145		Brief Cognitive Behavioral Therapy Reduces Post Treatment Suicide Attempts in a Military Sample - Results of a Two Year Randomized Clinical Trial	M. David Rudd, PhD, ABPP University of Memphis Memphis, TN	
1145-1200		Brain Injury: Relationship to Military Occupational Hypobaric Exposure	Stephen McGuire, MD University of Texas Health Science Center San Antonio, TX	
1200-1300		Lunch		Grand/ Ocean 3030/ Oceanview Terrace
1215-1315		<b>Lunchtime Breakout Session</b> <b>Ft Benning Study (Methicillin Resistant Staphylococcus Aureus/Skin &amp; Soft Tissue Injury)</b>	<b>Moderator</b> <b>CDR Gail Chapman, USN</b>	<b>Clearwater/ Orlando</b>
	1215-1230	Overview	Ellis	
	1230-1252	Epidemiology of Skin and Soft-Tissue Infections in Trainees at Fort Benning	Ellis	
	1252-1315	Impact of the Nasal Microbiome on the Development of Staphylococcal Skin and Soft-Tissue Infections at Fort Benning	Ryan	
1300-1500		Breakout Sessions		
		<b>Human Performance &amp; Occupational Health</b> <b>Human Performance Research</b>	<b>Moderator</b> <b>Mr. Cliff Otte</b>	<b>Ocean 1</b>
	1300-1303	Introduction	Vanderbeek	
	1303-1316	A National Survey of Call-Shift Fatigue Experiences in Certified Registered Nurse Anesthetists	Spence	
	1316-1329	Integrated Operational Tools to Monitor for Warfighter Fatigue	Mollicone	
	1329-1342	Sleep Deprivation Decreases Fear Conditioned Skin Conductance Levels	Germain	



TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1342-1355	Effects of U.S. Navy Diver Training on Physiological Parameters, Time of Useful Consciousness, and Cognitive Performance During Periods of Normobaric Hypoxia	Haran	
	1355-1408	An Evidence-Based Wellness and Safety Program Enhances the Performance Triad	Goldberg	
	1408-1421	The SHIELD (Safety & Health Improvement: Enhancing Law Enforcement Departments) Study: A New Health Enhancement Model For Active and Retired Military Personnel	Kuehl	
	1421-1434	AMES Enhances Movement Performance in Both Impaired and Able-Bodied Adults	Cordo	
	1434-1447	Biomechanical Differences of the Warfighter When Wearing Load-Distributing Personal Protective Equipment Compared With Traditional Gear	Sessoms	
	1447-1500	The Effects of Distraction, Restraints, Training, and Seat Location on Vehicle Egress Time	Thompson	
		<b>Trauma Care - Extremity Trauma &amp; Limb Regenerative Research</b>	<b>Moderators COL Romney Andersen, USA Joseph Wenke, PhD</b>	<b>Ocean 2</b>
	1300-1305	Introduction	Andersen and Wenke	
	1305-1319	Local Inflammatory Response May Be Affected By Distant Trauma in Combat-Related Extremity Wounds	Lisboa	
	1319-1333	Near-Infrared Spectroscopy in the Sub-Acute Setting of Lower Extremity Trauma	Freedman	
	1333-1347	Contaminated Open Fracture Wounds Are Hypovascular But Hyperperfused	Gilbert	
	1347-1401	Effect of Grafting Materials on Bone Healing in a Chronic Caprine Tibial Defect Model	Pluhar	
	1400-1415	Translational Autologous Approaches for Regeneration of Skeletal Muscle	Rathbone	
	1415-1429	Factors Influencing Infection in 10-years of Combat Open Tibia Fractures	Penn-Barwell	
	1429-1443	The Lessons of War: Turning Medical Data into Clinical Decisions	Elster	
	1442-1457	The Military Orthopaedic Trauma Registry: Quality Data Now Available	Rivera	
	1457-1500	Wrap -Up	Andersen and Wenke	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
		<b>Graduate Medical Education</b>  <b>American College of Surgeons Committee on Trauma Region 13 Resident Presentations</b>	<b>Moderator</b> <b>Col Jeff Bailey, USAF</b>	<b>Ocean 3</b>
	1300-1305	Introduction	Bailey	
	1305-1328	<b>Basic Science Category</b> Administration of FTY720 During Tourniquet-Induced Hind Limb Ischemia- Reperfusion Injury Attenuates Morbidity and Mortality	Sexton	
	1328-1351	<b>Clinical Science Category</b> Early Complications and Outcomes in Combat Injury-Related Invasive Fungal Infections: A Case-Control Analysis	Lewandowski	
	1351-1414	<b>Clinical Science Category</b> A Simplified Trauma Triage System Safely Reduces Overtriage and Improves Provider Satisfaction: A Prospective Study	Shawhan	
	1414-1437	<b>Clinical Science Category</b> The Transfusion Effect Revisited – The Impact of Deceased Organ Donor Blood Transfusions on the Outcomes of 1990 Renal Grafts	de la Cruz	
	1437-1500	<b>Clinical Science Category</b> Training and Skills Sustainment - Combat Casualty Simulation and Training - A Comparison of Two Medical Training Modalities for CAF Medical Technicians: Live Tissue Training and High Fidelity Patient Simulator	Pannell	
		<b>Trauma Care - Prehospital &amp; Tactical Combat Casualty Care</b>	<b>Moderators</b> <b>LTC Robert Mabry, USA</b> <b>Sylvain Cardin, PhD</b>	<b>Ocean 4</b>
	1300-1303	Introduction	Mabry and Cardin	
	1303-1316	Rapid Sequence Induction of Anaesthesia via the Intraosseous Route: A Prospective Observational Study	Barnard	
	1316-1329	Evaluation of Junctional Tourniquets in a Care Under Fire Exercise: Feedback Regarding Application and Practical Use	Shackleford	
	1329-1342	Evaluation of Hydroxocobalamin Compared to Hextend® for Resuscitation of Type III Hemorrhage in a Swine Model	Bebarta	
	1342-1355	Prospective Study of Ketamine During Tacevac	Rush	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1355-1408	Feedback to the Field: Linking Postmortem Observations to Tactical Combat Casualty Care	Mazuchowski	
	1408-1421	Role I Trauma Experience of the Israeli Defense Force on the Syrian Border	Benov	
	1421-1434	Battlefield Trauma Care Documentation at the Point of Injury	Gross	
	1434-1447	Implementation of a Joint Trauma System Pre-Hospital Trauma Registry in Afghanistan: Cracking the Code on Data Capture for Tactical Combat Casualty Care	Geracci	
	1447-1500	Identifying DOTmLPF-P Challenges in Operation ENDURING FREEDOM to Assure High Quality and Predictable Combat Capability in the Delivery of Pre-Hospital and Tactical Combat Casualty Care – Examples from the Afghanistan Campaign.	Sauer	
1500-1530		Break		
1530-1730		Breakout Sessions	Breakout Sessions	
		<b>Human Performance &amp; Occupational Health Environmental/Occupational Health Hazards</b>	<b>Moderator David Jackson, PhD</b>	<b>Ocean 1</b>
	1530-1545	Heat Stroke, Return to Duty Status, and the Impact of Heat Tolerance Testing	Heaney	
	1545-1600	Novel Biomarkers for the Determination of Heat Stroke Severity	Quinn	
	1600-1615	A New Rapid Field Assessment of Heat Stroke Severity Using cTnI Point-of-Care Test Strips	Audet	
	1615-1630	Alteration in Circulating Metabolites During and After Heat Stress in the Conscious Rat: Potential Biomarkers of Exposure and Organ-Specific Injury	Ippolito	
	1630-1645	A Mobile Application for Prediction of Acute Mountain Sickness, Work Performance, and Altitude Acclimatization	Muza	
	1645-1700	Establishment of a Model for Investigating the Impact of Combined Environmental and Psychological Stressors	Galdzicki	
	1700-1715	Neutrophils Generate Microparticles Following Exposure to Inert Gases Due to Cytoskeletal Oxidative Stress	Thom	
	1715-1730	Chronic CO2 Retention Induces Gastroesophageal Lesions in Rats	Dean	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
		<b>Trauma Care - Craniofacial Trauma &amp; Face Regenerative Research</b>	<b>Moderators Lt Col Michael Davis, USAF Brian Pfister, PhD</b>	<b>Ocean 2</b>
	1530-1542	Localized Low Dose rhBMP-2 is Effective at Promoting Bone Regeneration in a Pre-Clinical Mandibular Segmental Defect Model	Carlisle	
	1542-1554	Repair of Rat Calvarial Critical Size Defects with Endothelial and Osteocyte Differentiated Adipose-Derived Stem Cells	Orbay	
	1554-1606	Collagen-Based Biomask as a Promising Skin Graft for Facial Burn	Cheng	
	1606-1618	Adipose Stem Cells are Able to Substitute for Fibroblasts and Support Keratinocyte Proliferation and Survival on a Collagen Matrix	Tholpady	
	1618-1630	Subtotal Nasal Reconstruction: A Case Highlighting Military and Civilian Collaboration to Achieve an Optimal Restorative Outcome	Latham	
	1630-1642	The Evolution of Structural Fat Grafting and Potential Military Applications	Coleman	
	1642-1654	Structural Fat Grafting for Craniofacial Trauma: A Project of the Biomedical Translational Initiative	Rubin	
	1654-1706	Face Transplantation In A Highly Sensitized Recipient	Bueno	
	1706-1718	Subdermally Applied Drug Eluting Micro-Particles Delay Acute Rejection Within Vascularized Composite Allotransplant Grafts	Fries	
	1718-1730	Use of Mercury in Dental Applications	Dunn	
		<b>Graduate Medical Education  Are the King's Clothes Tattered? The Value Graduate Medical Education Research</b>	<b>Moderators Woodson Scott Jones, MD CAPT Eric Elster, USN</b>	<b>Ocean 3</b>
	1530-1535	Introduction	Elster	
	1535-1550	Military GME Research: The Opportunities	Kellerman	
	1550-1605	Research and GME: Challenges/ Accreditation	Jones	
	1605-1620	Ingredients for Successful GME Research	Elster	
	1620-1635	Intentional Mentorship of Research Faculty	Murray	
	1635-1655	The Next Generation: Resident Research Success Stories	Borgman and Forsberg	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1655-1725	Panel discussion	LTG Robb, Rice, Kellerman and Speakers	
	1725-1730	Wrap-Up	Jones	
		<b>Trauma Care - Burn &amp; Intensive Care</b>	<b>Moderators</b> <b>Col Jeremy Cannon, USAF</b> <b>Jose Salinas, PhD</b>	<b>Ocean 4</b>
	1530-1533	Introduction	Cannon and Salinas	
	1533-1546	Does Creatinine Kinase Predict Renal Failure in Combat Casualties	Elterman	
	1546-1559	The Center for Devices and Radiological Health (CDRH) Autonomous Critical Care (ACC) Medical Countermeasures (EMCM) Initiative: Leveraging Regulatory Science to Enable the Advancement & Integration of Critical Care Technologies	Schwartz	
	1559-1612	The Future of Minimally Extracorporeal Life Support for Single and Multiorgan Failure	Batchinsky	
	1612-1638	Burn Intensive Care Unit Multidisciplinary Approach Facilitates Adult Extracorporeal Life Support Therapy	Mitchell	
	1638-1625	Determinants of Mortality in Combined Burn/Trauma Injuries: Size Makes a Difference	Palmieri	
	1638-1651	Pulmonary Emboli and Deep Vein Thromboses: Are They Always a Part of the Same Disease Spectrum?	Gordon	
	1651-1704	Determination of the Optimal Delirium Screening Tool for Burn Intensive Care Unit Patients	Mann-Salinas	
	1704-1717	Full-Thickness Burn Size: More Important Than Total Burn Size in Determining Fluid Needs During Burn Resuscitation?	Salinas	
	1717-1730	Prospective Multicenter Randomized Skin Graft Cover Dressing Clinical Trial	Chan	

# AGENDA: THURSDAY, 21 AUGUST

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
0700-0800		Breakfast		Grand/ Ocean 3030/ Oceanview Terrace
0800-0830		<b>Awards Ceremony</b>	<b>COL Dallas Hack, USA</b> <b>Col Todd Rasmussen, USAF</b>	<b>Ocean Ballroom</b>
		<b>Administrative Remarks</b>	<b>Moderator</b> <b>COL Michael Kozar, USA</b>	
0830-0855		<b>Keynote Presentation</b>  <b>FDA Role in Facilitating the Development, Approval, and Availability of DoD Medical Countermeasures</b>	<b>CAPT Carmen T. Maher, USPHS</b> <b>Deputy Director, Office of Counter Terrorism and Emerging Threats</b> <b>Food and Drug Administration</b>	
0855-0910		The ARMoR Program: DoD's Response to Escalating Antimicrobial Resistance	COL Emil P. Lesho, USA Walter Reed Army Institute of Research Forest Glen, MD	
0910-0925		A Handheld Fluorescence Imaging Device for Assessment of Chronic Wound Infections: Pilot Clinical Results	Ralph DaCosta, PhD MolecuLight, Inc. Toronto, Canada	
0925-0940		Impulse Noise Injury Model	Philemon Chan, PhD L-3 Communications San Diego, CA	
0940-1000		Break		
1000-1200		Breakout Sessions		
		<b>Human Performance &amp; Occupational Health Injury Prevention - Sensory &amp; Musculoskeletal Injuries</b>	<b>Moderator</b> <b>Richard Shoge, PhD</b>	<b>Ocean 1</b>
	1000-1015	An Interim LAeq8 Criterion for Impulse Noise Injury	Zagadou	
	1015-1030	Advanced Hearing Protection Requirements	Meegan	
	1030-1045	Blast Wave Pressure Dynamics at the Cornea as a Function of Eye Protection	Harding	
	1045-1100	Biomechanics-Based Predictions of Recruit Injury and Performance Outcomes During US Army Basic Combat Training	Negus	
	1100-1115	Non-Invasive Detection of Musculoskeletal Injuries: Use of Raman and Diffuse Reflectance Spectroscopy in Mice	Kottke	
	1115-1130	Hierarchical Development of Biomedically Validated Human Computational Models for Injury Prediction	Armiger	



TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1130-1145	Dynamic Response Index is Not a Suitable Predictor of Spinal Injury Risk in Underbelly Blast	Spurrier	
	1145-1200	Comparison of Injury Incidence Between the T-11 Advanced Tactical Parachute System and the T-10 Parachute	Hoedebecke	
		<b>Neurotrauma/Traumatic Brain Injury Session 1</b>	<b>Moderators Kenneth Curley, MD Crystal Hill-Prior, PhD</b>	<b>Ocean 2</b>
	1000-1012	Impairment of Olfactory Performance in Combat Troops Diagnosed with Traumatic Brain Injury: Prospective Controlled Study	Xydakis	
	1012-1024	The Brain Injury Guidelines: A Prospective Analysis	Joseph	
	1024-1036	Postural Sway Metrics after Concussion: Implications for Balance Testing	King	
	1036-1048	Competitive Abstract MHSRS-714 Is Simple Reaction Time the Best Indicator of White Matter Disruption in Service Members with Invisible Wounds of War?	Spira	
	1048-1100	TEAM TBI: Diagnosis of White Matter Damage with High Definition Fiber Tracking in Patients with Chronic TBI	Schneider	
	1100-1112	Neuroradiology Findings in a Cohort of Military Service Members with Traumatic Brain Injury	Riedy	
	1112-1124	Visualizing “Invisible Wounds” and Developing Therapeutic Approaches for Blast-Wave Induced Mild TBI	Chen	
	1124-1136	Evaluation of an Operational Return-to-Duty Assessment Program: Preliminary Assessment of the Construct Validity Using an Archived Database of Clinical Data	Ranes	
	1136-1148	Can “Return to Play” be Predicted From Brain Electrical Activity at Time of Concussive Injury in Athletes?	Prichap	
	1148-1200	Evaluating the Effectiveness of (Early) Psycho-Educational Intervention for Military Personnel with Mild Traumatic Brain Injury: A Cohort Study	Brunger	
		<b>Infectious Disease &amp; Complications Wounds/Skin/Soft Tissue Infections</b>	<b>Moderator LTC Wendy-Sammons-Jackson, USA</b>	<b>Ocean 3</b>
	1000-1020	CHD-FA is a Highly Effective Topical Broad-Spectrum Antimicrobial for Drug-Resistant Wound Infections	Perlin	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1020-1040	Mathematical Models Can Identify Biomarkers and Mechanisms of Chronic Wound Inflammation	Mitrophanov	
	1040-1100	Monoclonal Antibody Made Against the Type Six Secretion System of <i>Acinetobacter baumannii</i> Can Protect From Infection and Be Used as a Diagnostic	Zurawski	
	1100-1120	Infection Reduction Observed in First-in-Man Use of a Novel Blood Plasma-Based Biomaterial Treatment for Open Tibia Fractures	J. Smith	
	1120-1140	Early Complications and Outcomes in Combat Injury Related Invasive Fungal Wound Infections: A Case-Control Analysis	Lewandowski	
	1140-1200	Evaluation of a Bioelectric Dressing as the Next Generation Wound Care Product	Izadjoo	
		<b>Training &amp; Skills Sustainment Military-Civilian Training &amp; Sustainment Platforms</b>	<b>Moderators Col Raymond Fang, USAF CAPT Eric Elster, USN</b>	<b>Ocean 4</b>
	1000-1005	Introduction	Fang and Elster	
	1005-1020	Air Force Center for Sustainment of Trauma and Readiness Skills at the University of Maryland's R. Adams Cowley Shock Trauma Center	Fang	
	1020-1035	Navy Trauma Training Center at the LA County/University of Southern California Medical Center	Ricks	
	1035-1050	Army Trauma Training Center at the University of Miami's Ryder Trauma Center	Seery	
	1050-1105	Operating a Military Level I Trauma Center Caring for Civilian Trauma - San Antonio Experience	Putnam	
	1105-1120	Surgical Skills Blueprinting: A Path Ahead	Ritter	
	1120-1200	Sustaining Trauma Skills in Peacetime: Challenges Following Operation DESERT STORM	LTG (ret) Carlton	
1200-1300		Lunch		Grand/ Ocean 3030/ Oceanview Terrace

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
1215-1315		<b>Lunchtime Breakout Session</b> <b>Trauma, Infection, Disease Outcomes Studies</b>	<b>Moderator</b> <b>LTC Wendy Sammons-Jackson, USA</b>	<b>Clearwater/ Orlando</b>
	1215-1230	Environmental Factors Associated with the Presence of Mold: Potential Risk Factors for Combat-Trauma Related Invasive Fungal Wound Infections	Tribble	
	1230-1245	Lessons of War: Combat-Related Injury Infections During the Vietnam War and Operation Iraqi and Enduring Freedom (OIF/OEF)	Murray	
	1245-1300	Risk Factors for Infection in Combat Casualties From Iraq and Afghanistan	Tribble	
	1300-1315	Tranexamic Acid Administration and Infection Risk in Combat Casualties	Lewis	
1300-1500		Breakout Sessions		
		<b>Psychological Health &amp; Rehabilitation &amp; Recovery</b> <b>Psychological Health - Suicide</b>	<b>Moderator</b> <b>LTC Dennis McGurk, USA</b>	<b>Ocean 1</b>
	1300-1305	Introduction	McGurk	
	1305-1325	Improving the Detection and Prediction of Suicidal Behavior Among Military Personnel by Measuring Suicidal Beliefs: An Evaluation of the Suicide Cognitions Scale	Bryan	
	1325-1345	Optimizing Screening and Risk Assessment for Suicide Risk in the U.S. Military	Ribeiro	
	1345-1405	Management of Suicide-Related Events During Deployment	Holloway	
	1405-1425	Post Admission Cognitive Therapy (PACT) for the Inpatient Treatment of Military Personnel with Suicide-Related Ideation and Behavior	Neely	
	1425-1445	A Virtual Hope Box Smartphone App as an Accessory to Therapy: Proof of Concept in a Clinical Sample of Veterans	Bush	
	1445-1500	Discussant Comment & Discussion	McGurk	
		<b>Neurotrauma/Traumatic Brain Injury Session 2</b>	<b>Moderators</b> <b>Kenneth Curley, MD</b> <b>CDR Rene Hernandez, USN</b>	<b>Ocean 2</b>
	1300-1312	The Effects of Combat-Related Mild Traumatic Brain Injury: Does Blast mTBI History Matter?	Kontos	
	1312-1324	The Natural History of Acute Recovery of Blast-Induced Mild Traumatic Brain Injury: A Case Series During War	Carr	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1324-1336	Multiple Past Concussions Are Associated with Ongoing Symptoms But Not Cognitive Impairment in Active Duty Army Soldiers	Dretsch	
	1336-1348	Predictors of Mental Health Outcomes of Mild Traumatic Brain Injury: Concussion Clinics in Afghanistan	Eskridge	
	1348-1400	Histopathological Changes and Cognitive Deficits Following Closed-Head Concussive Injury in Rats	Leung	
	1400-1412	Chronic Post Concussive Symptoms in Soldiers Returning from Service in Iraq or Afghanistan and at 3 Months Follow-Up: A Prospective Cohort Study	Schwab	
	1412-1424	Differences in Symptom Severity in mTBI Patients With and Without PTSD	DeGrabs	
	1424-1436	In vivo Two-Photon Imaging Revealed Abnormal Cerebral Microcirculation Following Mild Traumatic Brain Injury	Jin	
	1436-1448	Multicenter Comparison of Five Therapies Reveals Therapeutic Potential for Levetiracetam: Studies From Operation Brain Trauma Therapy	Tortella	
	1448-1500	The Isobolic Approach to Combination Drug Therapy Development for Traumatic Brain Injury	Shear	
		<b>Pain Management - Acute &amp; Chronic Pain Management</b>	<b>Moderators Marcie Fowler, PhD Tony Gover, PhD</b>	<b>Ocean 3</b>
	1300-1315	Effect of the Nociceptin/Orphanin FQ Peptide Receptor Antagonist JTC-801 on Cytokine Expression, Pain and Anxiety Following Exposure to the Single Prolonged Stress Model of PTSD	Standifer	
	1325-1330	Traumatic Brain Injury Modulates Key Neurochemicals With Reciprocal Interactions in the Pain Pathway	Elliott	
	1330-1345	Prehospital Pain Medication Use by U.S. Forces in Afghanistan	Shackelford	
	1345-1400	Pharmacological Studies of NOP-Related Agonists as Novel Analgesics in Nonhuman Primates	KO	
	1400-1415	Opioid-Sparing Therapeutic Regimen for Traumatic and Neuropathic Pain	White	
	1415-1430	Preemptive Bupivacaine Treatment Blocks Long-Term Allodynic Responses in a Rat Spinal Nerve Ligation Model for Neuropathic Pain	Clifford	

TIME	PRESENTATION SUB-TIMES	PRESENTATION TITLE	SPEAKER OR EVENT	MEETING ROOM
	1430-1445	Treatment of Post-traumatic Neuropathic Pain and Complex Regional Pain Syndrome I (CRPS-I) by Decreasing Neuroinflammation via Modulation of the Glial Cannabinoid Type 2 (CB2) Receptor with a Novel Compound (MDA7)	Naguib	
	1445-1500	Antinociceptive Effects of 9 10 Nicotinic Acetylcholine Receptor ( 9 10 nAChR) Antagonists in a Thermal Injury-Induced Full-Thickness Rat Pain Model	Cheppudira	
1330-1530		<b>Infectious Disease &amp; Complications Infectious Disease Research &amp; Diagnostics</b>	<b>Moderator CDR Gail Chapman, USN</b>	<b>Ocean 4</b>
	1330-1350	Combating Staphylococcal Skin and Soft-Tissue Infections in Trainees at Fort Benning	Ellis	
	1350-1410	Unit Practice Council Successful Efforts for Implementing Use of Alcohol Port Protectors	Mitchell	
	1410-1430	Changing the Way the DoD Performs Pathogen Surveillance: The Results of the Analysis of MERS-CoV in the Military Population	Starr	
	1430-1450	Dramatic Decline of Respiratory Illness Among US Military Recruits After the Renewed Use of Adenovirus Vaccines	Hawksworth	
	1450-1510	Lateral Flow Rapid Test for Diagnosis of Scrub Typhus – A Febrile Illness of Historical Military Importance In The Pacific Rim	Chao	
	1510-1530	Intra-Operative Dip-Coating of Orthopedic Hardware Prevents Biofilm Formation and Supports Fracture Healing in a Large Animal Model	Schaer	
1530		<b>MHSRS 2014 Ends</b>	<b>MHSRS 2014 Ends</b>	

# AGENDA/ADDITIONAL MEETINGS

TIME	PRESENTATION TITLE	HOTEL LOCATION	MEETING ROOM
<b>Sunday 17 Aug 2014</b>			
0900-1600	<b>By Invitation Only</b> USSOCOM Tactical Combat Casualty Care (TC3) IPT	Marriott	Ocean 3
1800-2000	<b>By Invitation Only</b> The Joint Trauma System Directors Group	Marriott	Ocean 1
1900-2030	<b>By Invitation Only</b> Armed Services Biomedical Research Evaluation and Management Meeting	Marriott	Ocean 2/4
<b>Monday 18 Aug 2014</b>			
1800-1930	<b>By Invitation Only</b> Center for the Sustainment of Trauma and Readiness Skills/CSTARS	Marriott	Private Dining Room 14
<b>Tuesday 19 Aug 2014</b>			
1200-1300	Joint Program Committee-6 Joint En Route Care Steering Committee	Marriott	Orlando
1300-1500	Navy En Route Care Research Discussion/Workshop	Marriott	Orlando
1300-1400	<b>Open to All</b> Medical Technology Enterprise Consortium (MTEC) Draft Solicitation and HORUS Vision Restoration Project  The MTEC is a new way to partner through collective sharing of research and partnerships to pursue ground-breaking solutions for the most complex battle related injuries. The pilot project will investigate using artificial vision to restore sight to those with traumatic ocular injuries.	Sheraton	Clipper A
1500-1800	<b>By Invitation Only</b> Joint Program Committee-8 Meeting	Sheraton	Point Room
1500-1700	<b>By Invitation Only</b> Internal Program Management Review Air Force Medical Service	Marriott	Private Dining Room 14
<b>Wednesday 20 Aug 2014</b>			
0900-1030	Joint Program Committee-5 Working Group Chairs Meeting	Marriott	Clearwater/ Orlando
1530-1630	<b>By Invitation Only</b> Tactical Combat Casualty Care Research Steering Committee	Marriott	Private Dining Room 14
1530-1700	<b>By Invitation Only</b> USSOCOM Biomedical RDT&E Advisory Group (BRAG) (in lieu of the traditional BISC)	Marriott	Clearwater/ Orlando
1800-2000	<b>By Invitation Only</b> Combat Casualty Care Research Program Integrating Integrated Product Team Meeting	Sheraton	Point Room
1800-2100	<b>By Invitation Only</b> Technology Enabled Capabilities Demonstration; Brain in Combat & Environmental Sensors in Training Macro Study Issues and Discussion	Sheraton	Clipper A
<b>Friday, 22 August 2014</b>			
0800-1630	<b>By Invitation Only</b> The Technical Cooperation Panel-12/North American Treaty Organization	Marriott	Clearwater/ Orlando





# 2014 MHSRS POSTER PRESENTATIONS - POSTER SESSION 1

## HUMAN PERFORMANCE AND OCCUPATIONAL HEALTH - ENVIRONMENTAL/OCCUPATIONAL HEALTH HAZARDS

### **MHSRS-156    Poster Session: 1 - Poster # 1**

#### **Toxicokinetic Model Development for the Insensitive Munitions (IMX) Component 2,4-Dinitroanisole**

Lisa M. Sweeney<sup>1</sup>, Michelle R. Goodwin<sup>2</sup>, Chester P. Gut, Jr.<sup>2</sup>

<sup>1</sup> Henry M. Jackson Foundation for the Advancement of Military Medicine, Naval Medical Research Unit Dayton (NAMRUD), Wright Patterson Air Force Base (WPAFB), OH

<sup>2</sup> CAMRIS, NAMRUD, WPAFB, OH

### **MHSRS-229    Poster Session: 1 - Poster # 2**

#### **A user-friendly mobile app for predicting potable water needs: the Soldier Water Estimation Tool (SWET)**

Elizabeth M. Caruso<sup>1,2</sup>

<sup>1</sup> U.S. Army Research Institute of Environmental Medicine

<sup>2</sup> Oak Ridge Institute for Science and Education

### **MHSRS-341    Poster Session: 1 - Poster # 3**

#### **Can Mathematical Models Help Diagnose Lower-airway Lung Diseases?**

Bora Sul<sup>1</sup>, Anders Wallqvist<sup>1</sup>, Michael Morris<sup>2</sup>, Jaques Reifman<sup>1</sup>, Vineet Rakesh<sup>1\*</sup>

<sup>1</sup> Biotechnology HPC Software Applications Institute, Telemedicine and Advanced Technology Research Center, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD, USA

<sup>2</sup> Department of Medicine, San Antonio Military Medical Center, Fort Sam Houston, TX, USA

\*Presenter

### **MHSRS-342    Poster Session: 1 - Poster # 4**

#### **Predicting What We Cannot Measure: Heat Stress in Specific Organs**

Vineet Rakesh<sup>1</sup>, Jonathan D. Stallings<sup>2</sup>, Bryan G. Helwig<sup>3</sup>, Lisa R. Leon<sup>3</sup>, David A. Jackson<sup>2</sup>, Jaques Reifman<sup>1</sup>

<sup>1</sup> Biotechnology HPC Software Applications Institute, Telemedicine and Advanced Technology Research Center, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD, USA

<sup>2</sup> Biomarkers Program, U.S. Army Center for Environmental Health Research, Fort Detrick, MD, USA

<sup>3</sup> Thermal Mountain Medicine Division, U.S. Army Research Institute of Environmental Medicine Division, U.S. Army Research Institute of Environmental Medicine, Natick, MA, USA

### **MHSRS-392    Poster Session: 1 - Poster # 5**

#### **Utility of the Microbiome in Chemical Exposure Assessment.**

Young S. Lee<sup>1</sup>, John A. Lewis<sup>2</sup>, Jeffrey R. Kugelman<sup>3</sup>, Mariano Sanchez-Lockhart<sup>3</sup>, Gustavo F. Palacios<sup>3</sup>, Jonathan D. Stallings<sup>2</sup>

<sup>1</sup> ORISE Postdoctoral Fellow, US Army Center for Environmental Health Research, Fort Detrick, MD 21702-5010

<sup>2</sup> U.S. Army Center for Environmental Health Research, Fort Detrick, MD 21702-5010

<sup>3</sup> U.S. Army Medical Institute of Infectious Diseases, Fort Detrick, MD 21702-5010



**MHSRS-397 Poster Session: 1 - Poster # 6**

**Neurotoxic Effects of Repeated Exposure to Low-Dose Chlorpyrifos in Rats.**

Young S. Lee<sup>1</sup>, John A. Lewis<sup>2</sup>, Naissan Hussainzada<sup>1</sup>, Pamela J. Lein<sup>3</sup>, David A. Jackson<sup>2</sup>,  
Jonathan D. Stallings<sup>2</sup>

<sup>1</sup> ORISE Postdoctoral Fellow, US Army Center for Environmental Health Research, Fort Detrick, MD 21702-5010

<sup>2</sup> U.S. Army Center for Environmental Health Research, Fort Detrick, MD 21702-5010

<sup>3</sup> University of California, Davis, CA 95616

**MHSRS-437 Poster Session: 1 - Poster # 7**

**Dehydration associated with a simulated foot patrol in the heat impairs tolerance to a hemorrhagic insult**

Craig Crandall, PhD<sup>1</sup>, Zachary Schlader, PhD<sup>1</sup>, Eric Rivas, MS<sup>1</sup>, Daniel Gagnon, PhD<sup>1</sup>, Victor Convertino, PhD<sup>2</sup>

<sup>1</sup> Institute for Exercise and Environmental Medicine, Texas Health Presbyterian Hospital Dallas and University  
of Texas Southwestern Medical Center

<sup>2</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-473 Poster Session: 1 - Poster # 8**

**Rewarming Among Special Forces Warfighters Following Cold-Water Immersion**

Douglas M. Jones<sup>1</sup>, James A. Hodgdon<sup>1</sup>, Michael Villarroel<sup>2</sup>, Jay H. Heaney<sup>1</sup>

<sup>1</sup> Naval Health Research Center, San Diego, CA

<sup>2</sup> Naval Medical Center San Diego, San Diego, CA

**MHSRS-493 Poster Session: 1 - Poster # 9**

**Alterations in Tissue Small RNA after Heat Stress in the Conscious Rat**

Matthew G. Permenter<sup>1</sup>, Young S. Lee<sup>2</sup>, Christine E. Baer<sup>1</sup>, Danielle L. Ippolito<sup>2</sup>, John A. Lewis<sup>3</sup>,  
Jonathan D. Stallings<sup>3</sup>

<sup>1</sup> EXCET, Fort Detrick, Maryland, 21702-5010

<sup>2</sup> ORISE, Fort Detrick, Maryland 21702-5010

<sup>3</sup> Environmental Health Program, U.S. Army Center for Environmental Health Research, Fort Detrick, Maryland

**MHSRS-496 Poster Session: 1 - Poster # 10**

**In vitro and in vivo toxicogenomic evaluation of chromium exposure in the liver**

Michael S. Madejczyk<sup>1</sup>, Matthew G. Permenter<sup>2</sup>, Christine E. Baer<sup>2</sup>, William E. Dennis<sup>3</sup>, John A. Lewis<sup>3</sup>,  
Jonathan D. Stallings<sup>3</sup>

<sup>1</sup> ORISE Postdoctoral Fellow, Fort Detrick, MD

<sup>2</sup> Excet Inc., Fort Detrick, MD

<sup>3</sup> U.S. Army Center for Environmental Health Research, Fort Detrick, MD 21702

**MHSRS-551 Poster Session: 1 - Poster # 11**

**Reported environmental exposures of deployed military members after return from Iraq**

Col Sean Collins

**MHSRS-600 Poster Session: 1 - Poster # 12**

**Baseline Respiratory Function and Symptoms of Soldiers Prior to Deployment**

Michael J Morris, COL (R) USA, SAUSHEC



**MHSRS-614 Poster Session: 1 - Poster # 13**

**Does increased physical activity influence the incidence of acute mountain sickness at altitudes ranging from 2500 to 4300 m?**

Ellen L. Glickman<sup>1</sup>, Beth A. Beidleman<sup>2</sup>, Charles S. Fulco<sup>2</sup>, Janet E. Staab<sup>2</sup>, Robert W. Kenefick<sup>2</sup>, Sean P. Andrew<sup>2</sup>, Katelyn I. Guerriere<sup>2</sup>, Allen Cymerman<sup>2</sup>, Ingrid Sils<sup>2</sup>, Stephen R. Muza<sup>2</sup>

<sup>1</sup> Kent State University & Thermal and Mountain Medicine Division, U.S. Army Research Institute of Environmental Medicine

<sup>2</sup> Thermal and Mountain Medicine Division, U.S. Army Research Institute of Environmental Medicine

**MHSRS-652 Poster Session: 1 - Poster # 14**

**Hyperoxia and Hypercapnic Acidosis Increase Free Radical Production in Rat Caudal Solitary Complex Neurons**

Geoffrey Ciarlone, MS and Jay B. Dean, PhD

Department of Molecular Pharmacology & Physiology, Morsani College of Medicine, University of South Florida, Tampa, FL

**MHSRS-663 Poster Session: 1 - Poster # 15**

**What is the most beneficial overall two-day staging strategy to reduce the incidence of acute mountain sickness at 4300 m?**

Janet Staab, MS<sup>1</sup>, Beth Beidleman, ScD<sup>1</sup>, Charles Fulco, PhD<sup>1</sup>, Ellen Glickman, PhD<sup>2</sup>, Robert Kenefick, PhD<sup>1</sup>, Sean Andrew, BS<sup>1</sup>, Katelyn Guerriere, MS<sup>1</sup>, Allen Cymerman, PhD<sup>1</sup>, Stephen Muza, PhD<sup>1</sup>

<sup>1</sup> Thermal and Mountain Medicine Division, U. S. Army Research Institute of Environmental Medicine, Natick, MA 01760

<sup>2</sup> Exercise Physiology Department, Kent State University, Kent, OH 44242

**MHSRS-762 Poster Session: 1 - Poster # 16**

**Does increased physical activity while staging for two days influence the incidence of acute mountain sickness during subsequent exposure to high altitude?**

Charles S. Fulco, Beth A Beidleman, Ellen L Glickman, Janet E Staab, Robert W Kenefick, Bruce S Cadarette, Sean P Andrew, Katelyn I Guerriere, Allen Cymerman, Ingrid Sils, Stephen R Muza\*

Thermal and Mountain Medicine Division, USARIEM, Natick MA 01760-5007

\*Presenter

**MHSRS-774 Poster Session: 1 - Poster # 17**

**Determination of Individual Hydration Status by a Non-Invasive Hydration Status Monitor (HSM)**

Jake Fox<sup>1</sup>, MAJ Jonathan D. Stallings<sup>2</sup>, Sarka Southern, PhD<sup>3</sup>

<sup>1</sup> Medical Support Systems Project Management Office, U.S. Army Medical Materiel Development Activity, Ft, Detrick, MD

<sup>2</sup> U.S. Army Center for Environmental Health Research

<sup>3</sup> Gaia Medical Institute

**MHSRS-879 Poster Session: 1 - Poster # 18**

**Pathological Diagnoses of Deployed Military Personnel with Pulmonary Disease**

Cristian A. Madar, MD<sup>1</sup>, Michael J. Morris, MD<sup>1</sup>, Russell A. Harley, MD<sup>2</sup>, Teri J. Franks, MD<sup>2</sup>, Michael Lewin-Smith, MD<sup>2</sup>

<sup>1</sup> San Antonio Military Medical Center, Fort Sam Houston, TX

<sup>2</sup> The Joint Pathology Center, Silver Spring, MD



**MHSRS-1069 Poster Session: 1 - Poster # 19**

**Changes in Barometric Pressure Alter Susceptibility to Central Nervous System Oxygen Toxicity**

Heather E. Held, PhD<sup>1</sup>, Raffaele Pilla, PhD<sup>1</sup>, Csilla Ari, PhD<sup>1</sup>, Tina Fiorelli, PhD<sup>2</sup>, Carol S. Landon<sup>1</sup>, Jay B. Dean<sup>1</sup>

<sup>1</sup> Department of Molecular Pharmacology & Physiology, Hyperbaric Biomedical Research Laboratory, Morsani College of Medicine, University of South Florida, Tampa, FL, USA

<sup>2</sup> Molecular Medicine, Byrd Alzheimer's Institute, University of South Florida, Tampa, FL, USA

**MHSRS-1122 Poster Session: 1 - Poster # 20**

**Trends in care for respiratory conditions in OEF/OIF/OND Veterans FY02-FY11: A VA cohort study**

Michael J. Morris, MD<sup>2</sup>, Marcos Restrepo MD<sup>1</sup>, Kar Wei Leung<sup>1</sup>, Eric Mortensen<sup>3</sup>

<sup>1</sup> South Texas Veterans Healthcare System/University of Texas Health Science Center San Antonio

<sup>2</sup> Pulmonary/Critical Care PD, SAUSHEC Internal Medicine, Brooke Army Medical Center

<sup>3</sup> North Texas Veterans Healthcare System/University of Texas Southwestern Medical Center

**MHSRS-1188 Poster Session: 1 - Poster # 21**

**Efficacy and Tolerability of Therapeutic Ketosis for Resilience against Central Nervous System Oxygen Toxicity (CNS-OT): Acute and Chronic Studies**

Raffaele Pilla<sup>1</sup>, Heather Held<sup>1</sup>, Csilla Ari<sup>1</sup>, Patrick Arnold<sup>2</sup>, Jay B. Dean<sup>1</sup>

<sup>1</sup> University of South Florida; Morsani College of Medicine

<sup>2</sup> Savind Inc.

## **HUMAN PERFORMANCE AND OCCUPATIONAL HEALTH - HUMAN PERFORMANCE RESEARCH**

**MHSRS-62 Poster Session: 1 - Poster # 22**

**Assessment of Sleep Disruption and Sleep Quality in Naval Special Warfare Operators**

LT Erica Harris, PhD<sup>1</sup>, Sean Drummond, PhD<sup>2,3,4</sup>, Gerald Larson, PhD<sup>1</sup>, Rachel Markwald, PhD<sup>5</sup>, CDR Eric Potterat, PhD<sup>6</sup>, Kirk Parsley, MD<sup>6</sup>, Marc Taylor, PhD<sup>5</sup>

<sup>1</sup> Behavioral Sciences and Epidemiology Department, Naval Health Research Center (NHRC), San Diego, CA

<sup>2</sup> University of California, San Diego, CA

<sup>3</sup> VA San Diego Healthcare System (VASDHS), San Diego, CA

<sup>4</sup> VASDHS Center of Excellence for Stress and Mental Health, San Diego, CA

<sup>5</sup> Warfighter Performance Department, NHRC, San Diego, CA

<sup>6</sup> Naval Special Warfare Command, Coronado, CA

**MHSRS-66 Poster Session: 1 - Poster # 23**

**The Effect of Blood Flow Restriction During Aerobic Exercise on Insulin-Like Growth Factor-1**

Laura Palombo, MS, Andrew Jenson, MS, Brenda Neiderberger, MA, Stefania Marzano, MS, Karen Kelly, PhD  
Naval Health Research Center

**MHSRS-70 Poster Session: 1 - Poster # 24**

**User Evaluation Trial of Lower Limb Prosthetic Devices**

Capt Pauline Godsell, BSCT<sup>1</sup>, Capt Jose Peralta-Huertas, MD<sup>2</sup>, LCol Marcus Besemann, MD<sup>1</sup>, Mike Spivock, PhD<sup>3</sup>

<sup>1</sup> Canadian Forces Health Services Group Headquarters (CF H Svcs Gp HQ)

<sup>2</sup> Canadian Forces Environmental Medicine Establishment (CFEME)

<sup>3</sup> Directorate of Fitness, Canadian Forces



**MHSRS-150 Poster Session: 1 - Poster # 26**

**Long-term Retention of Task-specific Training in a Noninjured Population Using the Computer Assisted Rehabilitation Environment (CAREN)**

Amanda E. Markham, MPH, John-David Collins, MA, Kathrine A. Service, BS, LCDR Jose A. Dominguez, PT, LT Seth A. Reini, PhD, Pinata H. Sessoms, PhD  
Naval Health Research Center

**MHSRS-227 Poster Session: 1 - Poster # 27**

**Functional Movement Changes With Deployment: The Combat Readiness Evaluation (CORE)**

Sarah de la Motte<sup>1</sup>, Peter Lisman<sup>2</sup>, Anthony Beutler<sup>1</sup>, Steven Blivin<sup>3</sup>, Francis O'Connor<sup>1</sup>, Patricia Deuster<sup>1</sup>

<sup>1</sup> Consortium for Health and Military Performance, Uniformed Services University, Bethesda, MD

<sup>2</sup> Towson University, Towson, MD

<sup>3</sup> Naval Hospital Camp Lejeune, NC

**MHSRS-327 Poster Session: 1 - Poster # 28**

**Telehealth Coaching to Promote Nutrition and Bone Health in Deployed Soldiers**

Sabrina Ramme<sup>1</sup>, Lori A. Loan<sup>2</sup>

<sup>1</sup> Center for Nursing Science & Clinical Inquiry, Madigan Army Medical Center, Tacoma, WA

<sup>2</sup> JPC-1 Medical Training & Health Information Science Research Program, MPMC, Ft. Detrick, MD

**MHSRS-391 Poster Session: 1 - Poster # 29**

**U-2 Pilot Post-Mission Discomfort Questionnaire**

Jennifer Serres, PhD<sup>1</sup>, Molly Wade, MS<sup>2</sup>, Bruce Wright, PhD<sup>1</sup>, William Dodson III, MD<sup>1</sup>

<sup>1</sup> United States Air Force School of Aerospace Medicine, Wright-Patterson Air Force Base, Ohio

<sup>2</sup> Peerless Technologies, Inc., Fairborn, Ohio

**MHSRS-408 Poster Session: 1 - Poster # 30**

**Disruptions in Calcium Homeostasis During Exercise Under Different Thermal Conditions**

Wendy Kohrt, PhD, Vanessa Sherk, PhD, Karen Shea, MD  
University of Colorado - Anschutz Medical Campus

**MHSRS-526 Poster Session: 1 - Poster # 31**

**Marksmanship: A precision tool for assessing operationally important, visually-precise performance**

David, L. Still, OD, PhD, Leonard A. Temme, PhD

Visual Protection and Performance Division, U.S. Army Aeromedical Research Laboratory, 6901 Andrews Ave, Fort Rucker, AL 36330

**MHSRS-611 Poster Session: 1 - Poster # 32**

**Assessing the interacting challenges of sleep restriction and shift work on physical and mental performance**

Matthew P Butler<sup>1,2,3</sup>, David A Barr<sup>2,3</sup>, Melanie Rueger<sup>2,3</sup>, Frank AJL Scheer<sup>2,3</sup>, Steven A Shea<sup>1,2,3</sup>

<sup>1</sup> Oregon Institute of Occupational Health Sciences, Oregon Health & Science University, Portland, OR

<sup>2</sup> Division of Sleep and Circadian Disorders, Brigham and Women's Hospital, Boston, MA

<sup>3</sup> Division of Sleep Medicine, Harvard University, Boston, MA



**MHSRS-628    Poster Session: 1 - Poster # 33**

**Effects of Sensory Afferent Signaling on the Development of Exertional Fatigue**

Ryan Sheppard, PhD, Aaron Hall, PhD

Naval Medical Research Center

**MHSRS-680    Poster Session: 1 - Poster # 34**

**Human Performance Capabilities Are Reduced More After Repeated 100% Oxygen Dives Than After Air Dives**

John Florian, PhD, Erin Simmons, MS, Taylor Thurston, BS, Jay Haran, PhD, Barbara Shykoff, PhD

Navy Experimental Diving Unit, Panama City, FL

**MHSRS-832    Poster Session: 1 - Poster # 35**

**Genetic Variants in Serotonin and Corticosteroid Systems Modulate Neuroendocrine and Cardiovascular Responses to Intense Stress**

Marcus Taylor, PhD<sup>1</sup>, Gerald Larson, PhD<sup>1</sup>, Melissa Hiller Lauby, PhD<sup>2</sup>

<sup>1</sup> Naval Health Research Center, San Diego, CA

<sup>2</sup> Naval Special Warfare Center, San Diego, CA

**MHSRS-840    Poster Session: 1 - Poster # 36**

**Spontaneous and Deliberate Dissociative States in Military Personnel: Relationships to Objective Performance Under Stress**

Marcus Taylor, PhD<sup>1</sup>, Charles Morgan III, MD<sup>2</sup>

<sup>1</sup> Naval Health Research Center, San Diego, CA

<sup>2</sup> Yale University School of Medicine, New Haven, CT

**MHSRS-857    Poster Session: 1 - Poster # 37**

**Salivary Nerve Growth Factor Response to Intense Stress: Effect of Sex and Body Mass Index**

Marcus Taylor, PhD<sup>1</sup>, Heidemarie Laurent, PhD<sup>2</sup>, Gerald Larson, PhD<sup>1</sup>, Mitchell Rauh, PhD<sup>1</sup>,

Melissa Hiller Lauby, PhD<sup>3</sup>, Douglas Granger, PhD<sup>4</sup>

<sup>1</sup> Naval Health Research Center, San Diego, CA

<sup>2</sup> University of Oregon, Eugene, OR

<sup>3</sup> Naval Special Warfare Center, San Diego, CA

<sup>4</sup> Arizona State University, Tempe, AZ

**MHSRS-964    Poster Session: 1 - Poster # 38**

**Longitudinal Performance Change Related to Repeated Low-Level Blast Exposure**

Charmaine Tate<sup>2</sup>, Stephanie E Eonta<sup>1</sup>, James Stone<sup>3</sup>, Shruti Dosi<sup>1</sup>, Heather Dark<sup>1</sup>, Gary H Kamimori<sup>1</sup>

<sup>1</sup> Behavioral Biology Branch, Center for Psychiatry and Neuroscience, Walter Reed Army Institute of Research, Silver Spring, MD 20910

<sup>2</sup> New Zealand Defence Force, Auckland, New Zealand

<sup>3</sup> Department of Radiology, University of Virginia, Charlottesville, VA 22908

**MHSRS-986    Poster Session: 1 - Poster # 39**

**Air Force Medical Service Patient-Centered Precision Care (PC2) Clinical Utility Study**

Lt Col David G. Watson, PhD<sup>1</sup>, Maj Ruth Brenner, MD<sup>1</sup>, Ronald A. Miller, PhD<sup>1</sup>, Michael F. Christman, PhD<sup>2</sup>

<sup>1</sup> Air Force Medical Support Agency, Falls Church, VA

<sup>2</sup> The Coriell Institute for Medical Research, Camden, NJ





**MHSRS-999 Poster Session: 1 - Poster # 40**

**Impact of caffeine on neurocognitive performance during sleep deprivation using the Defense Automated Neurobehavioral Assessment (DANA).**

Stephanie E Eonta<sup>1</sup>, Gemma M Paech<sup>2</sup>, Siobhan Banks<sup>2</sup>, Kayla Johnson<sup>3</sup>, Chris Della Vedova<sup>2</sup>, Gary H Kamimori<sup>1</sup>

<sup>1</sup> Behavioral Biology Branch, Center for Psychiatry and Neuroscience, Walter Reed Army Institute of Research, Silver Spring, MD 20910

<sup>2</sup> Centre for Sleep Research, University of South Australia, Adelaide, Australia

<sup>3</sup> Defence Science and Technology Organisation, Land Division, Edinburgh, Australia

## **HUMAN PERFORMANCE AND OCCUPATIONAL HEALTH - INJURY PREVENTION (SENSORY AND MUSCULOSKELETAL INJURIES)**

**MHSRS-64 Poster Session: 1 - Poster # 41**

**Lumbar Spine Postures in Marines During Simulated Operational Conditions**

David Berry<sup>2</sup>, Karen Kelly, PhD<sup>1</sup>, Ana Rodrigues-Soto<sup>2</sup>, Sara Gombatto, PhD<sup>3</sup>, Rebecca Jaworski, PhD<sup>1</sup>, Sam Ward, PT, PhD<sup>2</sup>

<sup>1</sup> Department of Warfighter Performance, Naval Health Research Center, San Diego, CA

<sup>2</sup> Departments of Radiology, Orthopaedic Surgery, and Bioengineering, University of California, San Diego, La Jolla, CA

<sup>3</sup> San Diego State University, San Diego, CA

**MHSRS-65 Poster Session: 1 - Poster # 42**

**Combat Injury Trends in U.S. Marines: 2009–2011 OIF/OEF**

Brenda Niederberger, MA<sup>2</sup>, Rebecca L. Jaworski, PhD<sup>1,2</sup>, Andrew Jensen, MS<sup>2</sup>, Karen R. Kelly, PhD<sup>2</sup>

<sup>1</sup> Marine Corps Systems Command, Quantico, VA

<sup>2</sup> Naval Health Research Center, San Diego, CA

**MHSRS-79 Poster Session: 1 - Poster # 43**

**Evaluation of Infantry Combat Equipment Torso Personal Protective Equipment (PPE) Prototype for the U.S. Marine Corps**

Brenda Niederberger, MA<sup>1</sup>, Marcus Gobrecht, MS<sup>2</sup>, John-David Collins, MA<sup>1</sup>, Pinata Sessoms, PhD<sup>1</sup>, Rebecca Jaworski, PhD<sup>3</sup>, Karen Kelly, PhD<sup>1,2</sup>

<sup>1</sup> Warfighter Performance Department, Naval Health Research Center, San Diego, CA

<sup>2</sup> School of Exercise and Nutritional Sciences, San Diego State University, San Diego, CA

<sup>3</sup> Marine Corps Systems Command, United States Marine Corps, Camp Pendleton, CA

**MHSRS-143 Poster Session: 1 - Poster # 45**

**T cell expressed CD40L is required for PTH to induce bone anabolism**

Jerid W. Robinson<sup>1</sup>, Jau-Yi Li<sup>1</sup>, Lindsey D. Walker<sup>1</sup>, Abdul Malik Tyagi<sup>1</sup>, Michael Reott<sup>1</sup>, Mingcan Yu<sup>1</sup>, Jonathan Adams<sup>1</sup>, M. Neale Weitzmann<sup>1,2</sup>, Roberto Pacifici<sup>1,3</sup>

<sup>1</sup> Division of Endocrinology, Metabolism and Lipids, Department of Medicine, Emory University, Atlanta, GA

<sup>2</sup> Atlanta VA Medical Center, Decatur, GA 30033

<sup>3</sup> Immunology and Molecular Pathogenesis Program, Emory University, Atlanta, GA





**MHSRS-252 Poster Session: 1 - Poster # 46**

**Imaging Analysis System for Identifying Hill-Sachs and Bankart Bone Lesions and Evaluating Joint Range-of-Motion for Confirming Need for Shoulder Bone Defect Repair Prior to Soldier Return to Active Duty**

Dr. Josh Polster, MD

Cleveland Clinic, Diagnostic Radiology, Cleveland, OH

**MHSRS-393 Poster Session: 1 - Poster # 47**

**Analysis of Noise-Induced Hearing Loss in U.S. Air Force (USAF) Aviation-related Special Duty Personnel**

Anthony Tvaryanas, Col, USAF, MC, SFS, Genny Maupin, MPH, Paul C. Genovesi, MSBA

711th Human Performance Wing, Wright-Patterson AFB, Dayton, OH

**MHSRS-468 Poster Session: 1 - Poster # 48**

**Comprehensive investigation of the association between exertional rhabdomyolysis and malignant hyperthermia susceptibility in a North American population**

C. Antonio Solla, MD<sup>1</sup>, Jason Longwell, MD<sup>1</sup>, Malgorzata Kasperska DO<sup>1</sup>, Nyamkhishig Sambuughin PhD<sup>2</sup>

Sheila Muldoon MD<sup>2</sup> John Capacchione MD<sup>1,2</sup>

<sup>1</sup> Department of Anesthesiology, Walter Reed National Military Medical Center, Bethesda MD

<sup>2</sup> Department of Anesthesiology, Uniformed Services University of the Health Sciences, Bethesda MD

**MHSRS-515 Poster Session: 1 - Poster # 49**

**BLUNT IMPACTS TO THE BACK: BIOMECHANIC AND INJURY RESPONSE FOR MODEL DEVELOPMENT**

Jason Forman, PhD<sup>1</sup>, John Paul Donlon<sup>1</sup>, Brandon Perry<sup>1</sup>, Kyvory Henderson<sup>1</sup>, David Lessley, PhD<sup>1</sup>,

Rob Salzar, PhD<sup>1</sup>, Tim Walilko, PhD<sup>2</sup>

<sup>1</sup> University of Virginia Center for Applied Biomechanics

<sup>2</sup> Applied Research Associates

**MHSRS-659 Poster Session: 1 - Poster # 50**

**Risk of Motor Vehicle Crash Hospitalizations in Iraq and Afghanistan War Veterans with Traumatic Brain Injury**

Kathleen F. Carlson, MS, PhD<sup>1,2</sup>, Maya E. O'Neil, PhD<sup>1,3</sup>, Christopher W. Forsberg, MS<sup>1</sup>, Lisa McAndrew, PhD<sup>4,5</sup>,

Daniel Storzbach, PhD<sup>6,7</sup>, David X. Cifu, MD<sup>8-10</sup>, Nina A. Sayer, PhD<sup>11,12</sup>

<sup>1</sup> Center to Improve Veteran Involvement in Care, Portland VA Medical Center (R&D 66), 3710 SW U.S. Veterans Hospital Road, Portland, OR 97239

<sup>2</sup> Department of Public Health and Preventive Medicine, Oregon Health and Science University, Portland, OR

<sup>3</sup> Department of Psychiatry, Oregon Health and Science University, Portland, OR

<sup>4</sup> University at Albany, State University of New York, 1400 Washington Avenue, Albany, NY 12222

<sup>5</sup> War Related Illness and Injury Study Center, VA New Jersey Health Care System, East Orange, NJ

<sup>6</sup> Department of Neuropsychiatry, Portland VA Medical Center, Portland, OR

<sup>7</sup> Department of Psychology, Oregon Health and Science University, Portland, OR

<sup>8</sup> Physical Medicine and Rehabilitation Services, Veterans Health Administration

<sup>9</sup> Physical Medicine and Rehabilitation Service, Hunter Holmes McGuire VA Medical Center, 1201 Broad Rock Boulevard, Richmond, VA 23249

<sup>10</sup> Department of Physical Medicine and Rehabilitation, Virginia Commonwealth University, P.O. Box 980677, Richmond, VA 23298

<sup>11</sup> Center for Chronic Disease Outcomes Research, Minneapolis VA Healthcare System (152/2E), One Veterans Drive, Minneapolis, MN 55417

<sup>12</sup> Departments of Medicine and Psychiatry, University of Minnesota Medical School, MMC 194, 420 Delaware Street S.E., Minneapolis, MN 55455



**MHSRS-683 Poster Session: 1 - Poster # 51**

**Deadly choices in deadly environments: results from a prolonged investigation of multiple military diver fatalities in cold water**

Dr. John Clarke

**MHSRS-967 Poster Session: 1 - Poster # 52**

**Intravenously Administration PEG-NELL-1 Promotes Bone Formation and Density**

Greg Asatryan<sup>1</sup>, Jin Hee Kwak, DDS,MS<sup>1</sup>, Yulong Zhang, PhD<sup>2</sup>, Juyoung Park, DDS,MS<sup>1</sup>, Chirag Chawan, DDS<sup>1</sup>, Aaron W James, MD<sup>3</sup>, Jia Shen, PhD<sup>2</sup>, Khambiz Khalilinejad, DDS<sup>1</sup>, Omar Velasco, MD<sup>2</sup>, Mahsa Dousti, DDS<sup>1</sup>, Xinli Zhang, MD,PhD<sup>1</sup>, Kang Ting, DMD,DMEDSCI<sup>1</sup>, Chia Soo, MD<sup>2</sup>

<sup>1</sup> Dental and Craniofacial Research Institute and Section of Orthodontics, School of Dentistry, University of California, Los Angeles, CA

<sup>2</sup> UCLA Division of Plastic Surgery and Department of Orthopaedic Surgery and the Orthopaedic Hospital Research Center, University of California, Los Angeles, CA

<sup>3</sup> Department of Pathology & Laboratory Medicine, David Geffen School of Medicine, University of California, Los Angeles, CA

**MHSRS-1014 Poster Session: 1 - Poster # 54**

**Assessment of damage along the optic nerve after low-level repeated blast exposure**

Jae Hyek Choi, PhD<sup>1</sup>, Joseph Novak, DVM<sup>2</sup>, Teresa A. Burke, BS<sup>1</sup>, Brian J. Lund, PhD<sup>1</sup>, Anthony J. Johnson, MD<sup>1</sup>, Jeffery M. Cleland, OD, MBA<sup>1</sup>, Heuy-Ching H. Wang, PhD<sup>1</sup>

<sup>1</sup> Ocular Trauma Task Area, U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston, TX 78234-631

<sup>2</sup> Department of Pathology, U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston, TX 78234-631

**MHSRS-1132 Poster Session: 1 - Poster # 55**

**Non-Invasive Identification of Laser Eye Injury in the Vitreous Humor**

Melissa I. Naiman, PhD<sup>1</sup>, Rachida A. Bouhenni, PhD<sup>2</sup>, Jeffrey J. Dunmire, MS<sup>2</sup>, Deepak P. Edward, MD<sup>3</sup>, Rafat R. Ansari, PhD<sup>4</sup>

<sup>1</sup> University of Illinois at Chicago

<sup>2</sup> Summa Health System

<sup>3</sup> Johns Hopkins University

<sup>4</sup> NASA Glenn Research Center

**MHSRS-1166 Poster Session: 1 - Poster # 56**

**Development of a cell self-assembled 3-dimensional in vitro skeletal muscle tissue model**

Jason Forte<sup>1</sup>, Alyssa M Fidanza<sup>1</sup>, Alexandra Grella<sup>2</sup>, Denis Kole, PhD<sup>1</sup>, Christopher Malcuit, PhD<sup>3</sup>, Raymond Page, PhD<sup>1</sup>

<sup>1</sup> Biomedical Engineering Department, Worcester Polytechnic Institute

<sup>2</sup> Biology & Biotechnology Department, Worcester Polytechnic Institute

<sup>3</sup> Biology Department, Kent State University

## **INFECTIOUS DISEASE AND COMPLICATIONS - INFECTIOUS DISEASE RESEARCH AND DIAGNOSTICS**

**MHSRS-50 Poster Session: 1 - Poster # 57**

**SagS contributes to the extraordinary resistance of biofilm cells to antimicrobial agents.**

Dr., Kajal Gupta, Dr., Olga E. Petrova, Dr.  
Binghamton University



**MHSRS-82      Poster Session: 1 - Poster # 58**

**Modifying Vaccination Schedules Reduce Incidence of Respiratory Disease and Result in Transient Immune Changes**

Anthony Hawksworth, LCDR Rachel Lee, MC, USN, Christian Hansen, Chris Myers, PhD, CDR  
Gary Brice, MSC, USN, CDR Dennis Faix, MC, USN  
Department of Operational Infectious Disease, Naval Health Research Center

**MHSRS-97      Poster Session: 1 - Poster # 59**

**What Effect Does Evidenced-based Design(EBD) Have on Contamination and Infections in DoD's Premier EBD Hospital- Ft Belvoir Community Hospital?**

Eve Hosford, BS<sup>1</sup>, Robert Clifford, PhD<sup>1</sup>, Uzo Chukwuma, PhD<sup>2</sup>, Nicole Dzialowy, PhD<sup>3</sup>, Michael Julius, BS<sup>1</sup>, Yoon Kwak, MS<sup>1</sup>, Ana Ong, BS<sup>1</sup>, Sue Fraser, MD<sup>3</sup>, Phil Carling, MD<sup>4</sup>, Paige Waterman, MD<sup>1</sup>, Patrick McGann, PhD<sup>1</sup>, Emil Lesho, DO<sup>1</sup>

<sup>1</sup> Walter Reed Army Institute of Research, Silver Spring, MD

<sup>2</sup> Navy and Marine Corps Public Health, EpiData Center, Portsmouth, VA

<sup>3</sup> Fort Belvoir Community Hospital, Fort Belvoir, VA

<sup>4</sup> Boston Medical Center, Boston, MA

**MHSRS-159      Poster Session: 1 - Poster # 60**

**Effect of Carbapenems on Biofilms of a Multi-drug Resistant Clinical Isolate of *Klebsiella pneumoniae***

Tricia A. Van Laar, PhD<sup>1</sup>, Tsute Chen, PhD<sup>2</sup>, Kai P. Leung, PhD<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Dental and Trauma Research Detachment

<sup>2</sup> The Forsyth Institute

**MHSRS-172      Poster Session: 1 - Poster # 61**

**Rapid detection of multidrug-resistant microorganisms in human serum by surface enhanced raman spectroscopy**

Dr. Christian Kotanen

**MHSRS-212      Poster Session: 1 - Poster # 62**

**A Cluster of Fatal Infections Due to a Rare Clone of Extensively Drug-resistant *Acinetobacter baumannii* with Enhanced Virulence: Combining Surveillance and Basic Science Research to Improve Care**

Crystal Jones, PhD<sup>1</sup>, Megan Clancy, MD<sup>2</sup>, Shweta Singh, BS<sup>1</sup>, Cary Honnold, DVM<sup>1</sup>, Erik Snesrud, BS<sup>1</sup>, Patrick McGann, PhD<sup>1</sup>, Fatma Onmus-Leone, MS<sup>1</sup>, Ana Ong, BS<sup>1</sup>, Yoon Kwak, MS<sup>1</sup>, Paige Waterman, MD<sup>1</sup>, Daniel Zurawski, PhD<sup>1</sup>, Robert Clifford PhD<sup>1</sup>, Emil Lesho, DO<sup>1</sup>

<sup>1</sup> Walter Reed Army Institute of Research, Silver Spring, MD

<sup>2</sup> Providence Alaska Medical Center, Anchorage, AK

**MHSRS-233      Poster Session: 1 - Poster # 63**

**A Heterologous Booster Vaccine Comprising Live Attenuated *Listeria monocytogenes* Expressing *Mycobacterium tuberculosis* Antigen 85B Enhances BCG-primed Cellular and Protective Immunity Against Tuberculosis**

Qingmei Jia, Barbara Jane Dillon, Jacob Sahakian, Marcus A. Horwitz

Department of Medicine, University of California—Los Angeles, Los Angeles, CA 90095-1688

**MHSRS-377      Poster Session: 1 - Poster # 64**

**DEVELOPMENT AND EVALUATION OF AN OZONE-BASED PORTABLE “POINT-OF-CARE” FIELD STERILIZER SYSTEM**

Luis A. Martinez, PhD, Alexander J. Burdette, PhD, Roy E. Dory, MS, Rene Alvarez, PhD

Naval Medical Research Unit San Antonio, San Antonio, TX



**MHSRS-476 Poster Session: 1 - Poster # 66**

**Which Commercial Automated Identification and Susceptibility Platform is Optimal for Multidrug-resistant Organisms: The Vitek-2, Phoenix, or Microscan?**

Lindsey Nielsen, Robert Clifford, Yoon Kwak, Calvina Glover, Caroline Argyros, Paige Waterman, Emil Lesho  
Multidrug-resistance Organism Repository and Surveillance Network (MRSN), WRAIR

**MHSRS-554 Poster Session: 1 - Poster # 67**

**Multicenter clinical evaluation of four dengue diagnostic devices**

Subhamoy Pal<sup>1</sup>, Allison L. Dauner<sup>1</sup>, Andrea Valks<sup>2</sup>, Tadeusz J. Kochel<sup>1</sup>, Eric S. Halsey<sup>3</sup>, Guillermo Comach<sup>4</sup>,  
Chadwick Yasuda<sup>5</sup>, Mike Loeffelholz<sup>6</sup>, Brett M. Forshey<sup>3</sup>, Amy C. Morrison<sup>3,7</sup>, Richard G. Jarman<sup>8</sup>,  
Stefan Fernandez<sup>9</sup>, Lou E. Jasper<sup>9</sup>, Shuenn-Jue L. Wu<sup>1 \*</sup>

<sup>1</sup> Naval Medical Research Center, Silver Spring, Maryland 20910-7500, USA

<sup>2</sup> Alere Australia, Sinnamon Park, Australia

<sup>3</sup> U.S. Naval Medical Research Unit, No. 6 (NAMRU-6), Lima, Peru

<sup>4</sup> LARDIDEV/BIOMED-UC, Venezuela

<sup>5</sup> U.S. Naval Medical Research Unit-2 Phnom Penh (NAMRU-2 PP), Cambodia

<sup>6</sup> University of Texas Medical Branch (UTMB), Galveston, TX 77555-0740, USA

<sup>7</sup> University of California, Davis, CA, 95616, USA

<sup>8</sup> Armed Forces Research Institute of Medical Sciences (AFRIMS) Bangkok, Thailand

<sup>9</sup> U.S. Army Medical Materiel Development Activity, Frederick, Maryland

\*Presenter

**MHSRS-576 Poster Session: 1 - Poster # 68**

**X-ray Crystal Structure Determination of *F. tularensis* IspD for Discovery and Development of Novel Antibacterials Targeting the MEP Pathway**

Schroeder Noble<sup>1</sup>, Arthur Tsang<sup>1</sup>, Nagarajan Pattabiraman<sup>2</sup>, Robin Couch<sup>3</sup>

<sup>1</sup> Department of Wound Infections, Bacterial Diseases Branch, Walter Reed Army Institute of Research,  
503 Robert Grant Avenue, Silver Spring, MD

<sup>2</sup> MolBox, Silver Spring, MD<sup>3</sup> Department of Chemistry and Biochemistry, George Mason University,  
4400 University Dr. Fairfax, VA

**MHSRS-644 Poster Session: 1 - Poster # 69**

**Histopathologic techniques for identifying fungal elements in tissue of combat casualties**

Sarah Heaton<sup>1</sup>, Amy Weintrob<sup>1,2</sup>, Faraz Shaikh<sup>2</sup>, Deepak Aggarwal<sup>2</sup>, Bradley Lloyd<sup>3</sup>, Tyler Warkentien<sup>1</sup>,  
Clinton Murray<sup>4</sup>, David Tribble<sup>2 \*</sup>, Justin Wells<sup>1</sup>

<sup>1</sup> Walter Reed National Military Medical Center, Bethesda, MD

<sup>2</sup> USU Infectious Disease Clinical Research Program, Bethesda, MD

<sup>3</sup> Landstuhl Regional Medical Center, Landstuhl, Germany

<sup>4</sup> San Antonio Military Medical Center, San Antonio, TX

\* Presenter

**MHSRS-665 Poster Session: 1 - Poster # 70**

**Novel Bio-Polymer Treatment used for *Pseudomonas aeruginosa*, Methicillin Resistant *Staphylococcus aureus* and *Acinetobacter baumannii* Colonized Wounds**

Stephen Davis



**MHSRS-668    Poster Session: 1 - Poster # 71**

**ARE MOLECULAR METHODS MORE SENSITIVE THAN CONVENTIONAL CULTURE FOR IDENTIFYING INVASIVE MOLDS?**

Anuradha Ganesan<sup>1</sup>, Brian Wickes<sup>2</sup>, Aaron Farmer<sup>3</sup>, Dana Blyth<sup>3</sup>, Clinton Murray<sup>3</sup>

<sup>1</sup> Walter Reed National Military Medical Center, Bethesda, Maryland, USUHS, Infectious Disease Clinical Research Program

<sup>2</sup> The University of Texas Health Science Center, San Antonio, TX

<sup>3</sup> San Antonio Military Medical Center, Infectious Disease Clinical Research Program, San Antonio, TX

**MHSRS-687    Poster Session: 1 - Poster # 72**

**Efficacy of Intravenous Kinocidin gamma-RP-1 versus Multi-Drug-Resistant *Acinetobacter baumannii* Pneumonia in a Neutropenic Murine Model**

Dr. Micahel Yeaman

**MHSRS-764    Poster Session: 1 - Poster # 73**

**Risk assessment associated with prior dengue exposure in DoD members and beneficiaries**

Theron Gilliland, Jr.<sup>1</sup>, Allison Dauner<sup>1</sup>, Subhamoy Pal<sup>1</sup>, Susana Widjaja<sup>1</sup>, Tahaniyat Lalani<sup>2,3</sup>, Karla Block<sup>1</sup>, Kanakatte Raviprakash<sup>1</sup>, Shuenn-Jue Wu<sup>1</sup>, Janine R Danko<sup>1</sup>, Maya Williams<sup>1</sup>, Jamie Fraser<sup>3</sup>, Dave Tribble<sup>3</sup>, Mark D. Johnson<sup>4</sup>, Tim Burgess<sup>3</sup>, Jason D. Maguire<sup>2</sup>

<sup>1</sup> Naval Medical Research Center, Silver Spring, MD

<sup>2</sup> Naval Medical Center, Portsmouth, VA

<sup>3</sup> Infectious Disease Clinical Research Program

<sup>4</sup> Naval Medical Center, San Diego, CA

**MHSRS-787    Poster Session: 1 - Poster # 74**

**Development of lyophilized loop-mediated isothermal amplification reagents for the detection of *Leptospira***

Giulia Weissenberger,<sup>1,2</sup> Wei-Mei Ching, Dr<sup>1,2</sup>

<sup>1</sup> Naval Medical Research Center, Silver Spring, MD

<sup>2</sup> Uniformed Services University of the Health Sciences, Bethesda, MD

**MHSRS-906    Poster Session: 1 - Poster # 76**

**Rapid Identification of Enteric Pathogens in a Deployed Situation**

Elia T. Villazana, Clarise R. Starr

USAFSAM/FHT, Wright-Patterson AFB, OH 45433

**MHSRS-951    Poster Session: 1 - Poster # 77**

**Seroincidence of Dengue Virus Infection among Active Duty Military Members Deployed to Southeast Asia on a Humanitarian Mission**

Nimfa Teneza-Mora MD<sup>1</sup>, Ryan Maves MD<sup>2</sup>, Janine Danko MD<sup>1</sup>, Kanakatte Raviprakash PhD<sup>1</sup>, Allison Dauner PhD<sup>1</sup>, Monika Simmons MS<sup>1</sup>, Mark Simons PhD<sup>2</sup>, Tadeusz Kochel PhD<sup>1</sup>

<sup>1</sup> Naval Medical Research Center

<sup>2</sup> Naval Medical Center San Diego, CA



**MHSRS-959 Poster Session: 1 - Poster # 78**

**Shigella IpaB/C/D Invasion Plasmid Sequence Conservation in a Wide Range of Clinical Isolates**

Tony Pierson, MAJ<sup>1</sup>, Dilara Islam, PhD<sup>2</sup>, Elizabeth Odundo, BS<sup>3</sup>, Robert W. Kaminski, PhD<sup>1</sup>, Jun Hang, PhD<sup>1</sup>, Nattaya Ruamsap, MSc<sup>2</sup>, Pimmada Sakpaisal, MSc<sup>2</sup>, Sasikorn Silapong, BS<sup>2</sup>, Wilawan Oransathid, PhD<sup>2</sup>, Paphavee Lertsethtakarn, PhD<sup>2</sup>, Ryan Maves<sup>4</sup>, Brook Danboise, CPT<sup>3</sup>, Richard Jarman, MAJ(P)<sup>1</sup>, Carl J. Mason, MD, MPH<sup>2</sup>, Geneviève Renaud-Mongénie, PhD<sup>5</sup>, Edwin V. Oaks, PhD<sup>1</sup>

<sup>1</sup> Walter Reed Army Institute of Research, Silver Springs, MD

<sup>2</sup> Armed Forces Research Institute of Medical Sciences (AFRIMS), Bangkok, Thailand

<sup>3</sup> Microbiology Hub Kericho, US Army Medical Research Unit - Kenya (USAMRU-K)

<sup>4</sup> U.S. Naval Medical Research Unit No. 6, Callao, Peru

<sup>5</sup> Sanofi-Pasteur, Marcy l'Etoile, France

**MHSRS-1008 Poster Session: 1 - Poster # 79**

**Prediction of Multiple Infections After Severe Burn Trauma**

Yan, Shuangchun, PhD<sup>1,2,3</sup>, Amy Tsurumi, PhD<sup>1,2,3</sup>, Yok-Ai Que, MD, PhD<sup>4</sup>, Colleen M Ryan, MD<sup>1,3</sup>, Arunava Bandyopadhyaya, PhD<sup>1,2,3</sup>, Alexander A Morgan, PhD<sup>5</sup>, Patrick J Flaherty, PhD<sup>6,7</sup>, Ronald G Tompkins, MD, ScD<sup>1</sup>, Laurence G Rahme, MS, PhD<sup>1,2,3</sup>

<sup>1</sup> Department of Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA

<sup>2</sup> Department of Microbiology and Immunobiology, Harvard Medical School, Boston, MA

<sup>3</sup> Shriners Hospitals for Children Boston, Boston, MA

<sup>4</sup> Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland

<sup>5</sup> Department of Biochemistry and Stanford Genome Technology Center, Stanford University School of Medicine, Palo Alto, CA

<sup>6</sup> Department of Biomedical Engineering, Worcester Polytechnic Institute, Worcester, MA

<sup>7</sup> Program in Bioinformatics and Computational Biology, Worcester Polytechnic Institute, Worcester, MA.

**MHSRS-1018 Poster Session: 1 - Poster # 80**

**Sterilizer Testing and Evaluation to Support Field Modernization Effort**

Daniel Kennedy<sup>1</sup>, COL Kimberly Smith<sup>2</sup>, MAJ Sheila Webb<sup>3</sup>, Lamar Reese<sup>1</sup>

<sup>1</sup> U.S. Army Medical Materiel Agency, Fort Detrick, MD

<sup>2</sup> 212th Combat Support Hospital, Miesau, Germany

<sup>3</sup> Kimbrough Ambulatory Care Center, Fort Meade, MD

**MHSRS-1045 Poster Session: 1 - Poster # 81**

**Evaluation Of Innate Immune Biomarkers In Saliva For Diagnostic Potential Of Bacterial And Viral Respiratory Infections**

Alexander J. Burdette, PhD and Rene Alvarez, PhD

Naval Medical Research Unit San Antonio, Joint Base San Antonio, Ft. Sam Houston, TX 78234

**MHSRS-1093 Poster Session: 1 - Poster # 82**

**Rapid Antimicrobial Susceptibility Testing of Pseudomonas aeruginosa and Acinetobacter baumannii Directly from Positive Blood Cultures by Automated Microscopy**

Ivor S. Douglas, MD FRCP<sup>1</sup>, Katie Overdier<sup>1</sup>, Alena Shamsheyeva<sup>2</sup>, Dulini Gamage<sup>2</sup>, Natalia Duarte<sup>2</sup>, Carlos Gutierrez<sup>2</sup>, Jessica Wilhalme<sup>2</sup>, Steven Metzger<sup>2</sup>, Ben Turng, PhD<sup>2</sup>, David Howson<sup>2</sup>, Connie S. Price<sup>1</sup>

<sup>1</sup> Denver Health Medical Center, U. of Colorado School of Medicine

<sup>2</sup> Accelerate Diagnostics





## PAIN MANAGEMENT - ACUTE AND CHRONIC PAIN MANAGEMENT

### **MHSRS-161 Poster Session: 1 - Poster # 84**

#### **Identifying a novel cascade that modulates IL-17 driven arthritis**

Dr. Shiva Shahrara

### **MHSRS-174 Poster Session: 1 - Poster # 85**

#### **Prehospital and en route analgesic use in traumatically injured patients in the combat setting**

LTC Lawrence Petz

### **MHSRS-299 Poster Session: 1 - Poster # 86**

#### **Prior Stress Exposure Increases Pain Behaviors in a Rat Model of Full Thickness Thermal Injury**

Jennifer E. Nyland, PhD<sup>1</sup>, Samuel McLean, MD<sup>2</sup>, John Clifford, PhD<sup>1</sup>, Marcie Fowler, PhD<sup>1</sup>,  
LTC Lawrence Petz, PhD<sup>1</sup>, Dayna Averitt, PhD<sup>3</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston, TX

<sup>2</sup> University of North Carolina at Chapel Hill, NC

<sup>3</sup> Texas Women's University, Dallas, TX

### **MHSRS-509 Poster Session: 1 - Poster # 87**

#### **Gender-Specific Analgesic Response to Sublingual Sufentanil Microtablets for Acute Pain**

Neil Singla, MD<sup>1</sup>, Derek Muse, MD<sup>2</sup>, Pamela Palmer, MD, PhD<sup>3</sup>

<sup>1</sup> Lotus Clinical Research, Pasadena, CA

<sup>2</sup> Jean Brown Research, Salt Lake City, UT

<sup>3</sup> AcelRx Pharmaceuticals, Redwood City, CA

### **MHSRS-522 Poster Session: 1 - Poster # 88**

#### **A 3-year analysis and comparison of opioid prescribing practices by emergency department providers in the military community for chronic pain**

Victoria J. Ganem, RN, BSN<sup>1</sup>, Alejandra G. Mora, BS<sup>1</sup>, Shawn M. Varney, MD<sup>3</sup>, Vikhyat S. Bebartha, Lt Col, MC<sup>1,2</sup>

<sup>1</sup> Air Force En Route Care Research Center

<sup>2</sup> San Antonio Military Medical Center, San Antonio, TX

<sup>3</sup> University of Texas Health Science Center at San Antonio, San Antonio, TX

### **MHSRS-662 Poster Session: 1 - Poster # 89**

#### **A Randomized, Double-Blind, Placebo-Controlled Trial of Stellate Ganglion Block in the Treatment of POST TRAUMATIC STRESS DISORDER**

Steve Hanling MD, Robert McLay MD, Anita Hickey MD, Ivan Lesnik MD, Carol Anne Drastal RN, Jeremy Hackworth MD

### **MHSRS-870 Poster Session: 1 - Poster # 90**

#### **Point-of-Injury Analgesia in the Modern Combat Setting**

LTC Robert Mabry





**MHSRS-997 Poster Session: 1 - Poster # 91**

**Does Functional Restoration for Chronic Pain Patients Work in a Military Population? Early results from the BAMC Functional Restoration Program (FRP)**

Lewis Sussman, PsyD, Rebekah Nilson, PT, MSPT, Jamie Clapp, PT, DPT Lynette Pujol, PhD, Benjamin Keizer, PhD, LtCol Howard Gill, MD, Justin Boge, DO, LtCol Tristan Lai, MD, Rob Overbaugh, MD, Morgan Webb, LTC Brandon Goff, DO

SAMMC/BAMC Department of Pain Management IPMC (Interdisciplinary Pain Management Center), San Antonio, TX

**MHSRS-1094 Poster Session: 1 - Poster # 93**

**USAISR BURN CLINIC PAIN MEDICATION USAGE PATTERNS FOR SEVERELY BURNED MILITARY SERVICE MEMBERS**

Col. Robert V. Gibbons, MD, Margaux M. Salas, PhD, John Jones, BS, Marcie Fowler, PhD, LTC Lawrence Petz, PhD, Maj Jacob Hansen, MD, Terry Slater, BS, Jeana Orman ScD, John L Clifford, PhD

U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-1145 Poster Session: 1 - Poster # 95**

**Novel long duration ultrasound therapy for pain management and biological regeneration**

Matthew D Langer, PhD, Rebecca Taggart, George K Lewis Jr., PhD

ZetrOZ Inc., 56 Quarry Rd, Trumbull, CT 06611

**MHSRS-1192 Poster Session: 1 - Poster # 96**

**Continuous local wound infiltration versus epidural after open liver resection: a randomised controlled trial**

Stephen McNally PhD, Natalie Peel MBChB, Ben Stutchfield MBChB, Ewen Harrison PhD,

Stephen Wigmore MD

International (non US)

**MHSRS-1036 Poster Session: 1 - Poster # 170**

**Curcumin Attenuates Thermal Hyperalgesia in a Rat Full Thickness Thermal Injury Model by Influencing Inflammation Signaling**

Dr. Margaux Salas

## **TRAINING AND SKILLS SUSTAINMENT - COMBAT CASUALTY SIMULATION AND TRAINING**

**MHSRS-49 Poster Session: 1 - Poster # 97**

**Highly Realistic Training for Navy Corpsmen: Preliminary Findings and Future Directions**

Stephanie Booth-Kewley PhD, Stephanie McWhorter, MA, Karl Van Orden, PhD

Naval Health Research Center San Diego, San Diego, CA

**MHSRS-495 Poster Session: 1 - Poster # 98**

**Fine Motion Tracking to Quantitatively Assess Combat Casualty Training**

Brian Goldiez, PhD<sup>1\*</sup>, Amanda Romeu<sup>1</sup> Christine Allen, PhD<sup>2\*</sup>

<sup>1</sup> University of Central Florida/Institute for Simulation and Training

<sup>2</sup> Army Research Laboratory Human Research and Engineering Directorate Simulation and Training Technology Center

\*Presenters



**MHSRS-559 Poster Session: 1 - Poster # 99**

**Handheld Simulation Procedure Training For Intravenous Catheterization: An In-a-Box Solution, An Out-of-the-Box Approach, A Health Care Paradigm Shift**

Debra Weiner, MD, PhD<sup>1</sup>, Mark Ottensmeyer, PhD<sup>2</sup>

<sup>1</sup> Emergency Medicine, Boston Children's Hospital/Harvard Medical School

<sup>2</sup> Simulation Group, Mass General Hospital/CIMIT/Harvard Medical School

**MHSRS-810 Poster Session: 1 - Poster # 100**

**Tourniquet Master Training for Junctional and Inguinal Hemorrhage Control (TMT)**

Peter W. Weyhrauch, PhD<sup>1</sup>, James Niehaus, PhD<sup>1</sup>, Max Metzger, BS<sup>1</sup>, Shlomi Laufer, PhD<sup>2,3</sup>, Calvin Kwan, BS<sup>2</sup>, Carla Pugh, MD, PhD<sup>2</sup>

<sup>1</sup> Charles River Analytics, Inc.

<sup>2</sup> Department of Surgery, University of Wisconsin-Madison

<sup>3</sup> Department of Electrical Engineering, University of Wisconsin-Madison

**MHSRS-1057 Poster Session: 1 - Poster # 101**

**A Bioprosthetic Simulation Wound Packing Trainer Equipped for Learner Biofeedback to Enhance Perishable Skills and Assess Procedure Competency**

James E. Johnson, PhD<sup>1</sup>, Robert Huebner<sup>2</sup>, Anne L. McKeague, PhD<sup>2</sup>

<sup>1</sup> Center for Applied Learning, Wake Forest Innovation / Wake Forest University School of Medicine, Medical Center Blvd, Winston-Salem, NC

<sup>2</sup> Z-Medica LLC, Wallingford, CT

**MHSRS-1129 Poster Session: 1 - Poster # 102**

**Development of an ED Thoracotomy Trainer**

Dr. Marc DeMoya

Neurotrauma - Traumatic Brain Injury

**MHSRS-507 Poster Session: 1 - Poster # 25**

**High medication burden in the Afghanistan/Iraq Veteran: CNS polypharmacy with TBI, PTSD, and depression**

Mr. Garen Collett

## **TRAINING AND SKILLS SUSTAINMENT - MILITARY MEDICAL SKILLS ACQUISITION AND SUSTAINMENT**

**MHSRS-119 Poster Session: 1 - Poster # 103**

**Adaptive Virtual Reality Training to Optimize Military Medical Skills Acquisition and Retention**

Ka-Chun Siu, PhD<sup>1</sup>, Bradley J. Best, PhD<sup>2</sup>, Jong Wook Kim, PhD<sup>3</sup>, Marsha Morien, MSBA<sup>1</sup>,

Dmitry Oleynikov, MD<sup>1</sup>, Frank E. Ritter, PhD<sup>4</sup>

<sup>1</sup> University of Nebraska Medical Center

<sup>2</sup> Adaptive Cognitive Systems, LLC

<sup>3</sup> University of Central Florida

<sup>4</sup> Penn State University



**MHSRS-242    Poster Session: 1 - Poster # 104**

**Effect Of Training Of Medical Cbrn Defense On The Level Of Skills Of Turkish Health Staff**

Mesut Ortatatli, MD, PhD, Levent Kenar, MD, PhD, Sermet Sezigen, MD, PhD, Ilker Kunak, MD, PhD, Koray Eyison, MD

Department of Medical CBRN Defense, Gulhane Military Medical Academy, Ankara, Turkey

**MHSRS-432    Poster Session: 1 - Poster # 105**

**Medical Training Evaluation and Report (MeTER) System Return On Investment Study**

Emily Burns Anton BS<sup>1</sup>, John Anton MS<sup>1</sup>, Nadine Baez BS<sup>1</sup>, Erin Honold BS<sup>1</sup>, Christine Allen PhD<sup>2</sup>

<sup>1</sup> Information Visualization & Innovative Research (IVIR) Inc., Sarasota, FL

<sup>2</sup> US Army Research Laboratory Human Research & Engineering Directorate Simulation & Training Center (ARL HRED STTC)

**MHSRS-465    Poster Session: 1 - Poster # 106**

**An Evidence Based Burn Precepting Program Improves Transition to Specialty Practice**

MAJ Johnnie Robbins

**MHSRS-596    Poster Session: 1 - Poster # 107**

**Ocular and craniofacial trauma treatment training simulator: hardware advances and user feedback**

Gianluca De Novi<sup>1,2</sup>, Gregory J. Loan<sup>1</sup>, Marcello Gallerani<sup>1,3</sup>, Federico Pifferi<sup>1,3</sup>, Mark P. Ottensmeyer<sup>1,2</sup>

<sup>1</sup> Simulation Group, Dept. of Radiology, Massachusetts General Hospital

<sup>2</sup> Harvard Medical School

<sup>3</sup> University of Modena

**MHSRS-673    Poster Session: 1 - Poster # 109**

**Mobile Platform to Evaluate Individual Surgeon Technical Skills**

Colin Mackenzie MD<sup>1</sup>, Mark Fitzgerald MD<sup>2</sup>, Kon Mouzakis MS<sup>3</sup>, Joost Funke Kupper MS<sup>3</sup>, George Hagegeorge<sup>1</sup>, Peter Hu PhD<sup>1</sup>, Evan Garofalo PhD<sup>1</sup>, Mary Njoku MD<sup>4</sup>, Mark Bowyer MD<sup>5</sup>, Sharon Henry MD<sup>1</sup>, Stacy Shackelford MD<sup>6</sup>

<sup>1</sup> University of Maryland STAR Research Center

<sup>2</sup> The Alfred Hospital, Melbourne, Australia

<sup>3</sup> Swinburne University, Melbourne, Australia

<sup>4</sup> University of Maryland, Department of Anesthesiology

<sup>5</sup> Uniformed Services University of Health Sciences, Bethesda, MD

<sup>6</sup> C-STARS, Baltimore, MD

**MHSRS-973    Poster Session: 1 - Poster # 110**

**Physical Anatomical Trainer Instrumented for Education and Non-subjective Testing (PATIENT)**

Anna M Galea, PhD, Minh Duong, MS, Eric Klem, MS, Eric Louis

Vivonics, Inc., Waltham, MA

**MHSRS-977    Poster Session: 1 - Poster # 111**

**Use of TeamSTEPPs as a Foundation to Prepare Army Forward Surgical Teams for Combat Teamwork**

LTC Paul Mittelsteadt



# TRAUMA CARE - EXTREMITY TRAUMA AND LIMB REGENERATIVE RESEARCH

## **MHSRS-37      Poster Session: 1 - Poster # 112**

### **Double stranded RNA and TLR3 initiates hair follicle neogenesis after wounding**

Amanda Nelson, PhD<sup>1,2</sup>, Adiya Katseff, BS<sup>1</sup>, Tabetha Ratliff, BS<sup>1</sup>, Sydney Resnik, BS<sup>1</sup>, Alex Whittam, BS<sup>1</sup>, Lloyd Miller, MD-PhD<sup>1</sup>, Luis Garza, MD-PhD<sup>1</sup>

<sup>1</sup> Johns Hopkins School of Medicine, Baltimore, MD

<sup>2</sup> Pennsylvania State School of Medicine, Hershey PA

## **MHSRS-59      Poster Session: 1 - Poster # 113**

### **Predictors of Flap and Limb Salvage Failure**

Jennifer Sabino, MD<sup>1</sup>, Donald J. Lucas, MD<sup>1</sup>, Raja Mohan, MD<sup>2</sup>, Patrick Basile, MD<sup>1</sup>, Robert Howard, MD<sup>1</sup>, Thomas Chung, DO<sup>1</sup>, Kerry Latham, MD<sup>1</sup>, Devinder P. Singh, MD<sup>2</sup>, Eduardo D. Rodriguez, MD<sup>2</sup>, Rachel Bluebond-Langner, MD<sup>2</sup>, Barry Martin, MD<sup>1</sup>, Ian Valerio, MD<sup>1</sup>

<sup>1</sup> Walter Reed National Military Medical Center

<sup>2</sup> University of Maryland Medical Center

## **MHSRS-60      Poster Session: 1 - Poster # 114**

### **Patients and Outcomes Comparisons Between Civilian and Military Trauma Undergoing Limb Salvage**

Jennifer Sabino, MD<sup>1</sup>, Raja Mohan, MD<sup>2</sup>, Donald J. Lucas, MD<sup>1</sup>, Patrick Basile, MD<sup>1</sup>, Robert Howard, MD<sup>1</sup>, Thomas Chung, DO<sup>1</sup>, Kerry Latham, MD<sup>1</sup>, Devinder P. Singh, MD<sup>2</sup>, Eduardo D. Rodriguez, MD<sup>2</sup>, Rachel Bluebond-Langner, MD<sup>2</sup>, Barry Martin, MD<sup>1</sup>, Ian Valerio, MD<sup>1</sup>

<sup>1</sup> Walter Reed National Military Medical Center

<sup>2</sup> University of Maryland Medical Center

## **MHSRS-130      Poster Session: 1 - Poster # 115**

### **Effect of a Locally Injected Mesenchymal Stem Cells in a Murine Model of S. aureus Osteomyelitis**

Dr. Nicole Ehrhart

## **MHSRS-165      Poster Session: 1 - Poster # 116**

### **A Regenerative and Infection Resisting Xenograft for Wartime Wounds**

David Cheung, PhD, Albert Grobe, PhD, Amy Rizzo, DVM, Timothy Descamps  
International Heart Institute of Montana Foundation (Non-Profit Research Center)

## **MHSRS-317      Poster Session: 1 - Poster # 117**

### **Bioartificial Dermal Substitutes in the Severely Traumatized Wounded Warrior – Updates and New Applications**

CDR(s) Ian L. Valerio, MD, MC, USN<sup>1</sup>, LT Jonathon Seavey, MD, MC, USN<sup>2</sup>,  
2LT Zachary Masters, MD, MC<sup>3</sup>

<sup>1</sup> Plastic and Reconstructive Surgery Service, Walter Reed National Military Medical Center

<sup>2</sup> Department of Orthopaedics, Walter Reed National Military Medical Center

<sup>3</sup> Uniformed Services University of the Health Services, Bethesda, MD



**MHSRS-359    Poster Session: 1 - Poster # 118**

**Fibromodulin reprogrammed progenitor cells for skeletal muscle regeneration**

Zhong Zheng, PhD<sup>1</sup>, Omar Velasco, MD<sup>2</sup>, Pu Yang, MD<sup>1,3</sup>, Elizabeth L Lord, MD<sup>2</sup>, Kambiz Khalilnejad, DDS<sup>1</sup>, Maxwell Murphy, BS<sup>1</sup>, Olivia Yue, BS<sup>1</sup>, Soyon Kim, BS<sup>1</sup>, Min Lee, MD<sup>1</sup>, Xinli Zhang, PhD, MD<sup>1</sup>, Kang Ting, DMD, DMS<sup>1</sup>, Chia Soo, MD<sup>2</sup>

<sup>1</sup> Dental and Craniofacial Research Institute and Section of Orthodontics, School of Dentistry, University of California, Los Angeles, Los Angeles, CA

<sup>2</sup> UCLA Division of Plastic Surgery and Department of Orthopaedic Surgery and the Orthopaedic Hospital Research Center, University of California, Los Angeles, Los Angeles, CA

<sup>3</sup> State Key Laboratory of Oral Diseases, West China Hospital of Stomatology, Sichuan University, Chengdu 610041, P. R. China

**MHSRS-362    Poster Session: 1 - Poster # 119**

**Physical Rehabilitation Improves Skeletal Muscle Function following Volumetric Muscle Loss Injury in Rats**

Thomas J. Walters, Amit Aurora, Koyal Garg, Benjamin T. Corona

U.S. Army Institute of Surgical Research Extremity Trauma and Regenerative Medicine Joint Base San Antonio-Fort Sam Houston, TX

**MHSRS-459    Poster Session: 1 - Poster # 120**

**Female Combat Amputees have Higher Rates of PTSD Disability**

MAJ Jessica Rivera

**MHSRS-471    Poster Session: 1 - Poster # 121**

**Development of a Cell Delivery Scaffold for Tissue Regeneration**

Catherine L. Ward, PhD<sup>1</sup>, Ruijing Guo, MS<sup>2</sup>, Scott A. Guelcher, PhD<sup>2</sup>, Joseph C. Wenke, PhD<sup>2</sup>

<sup>1</sup> United States Army Institute of Surgical Research, Extremity Trauma and Regenerative Medicine, Fort Sam Houston, TX

<sup>2</sup> Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville, TN

**MHSRS-518    Poster Session: 1 - Poster # 122**

**Surveying Femoral and Sciatic Nerve Damage using Raman Spectroscopy**

Eric A. Elster, MD<sup>1</sup>; Jonathan A. Forsberg, MD<sup>2</sup>; Nicole J. Crane, PhD<sup>2</sup>

<sup>1</sup> Uniformed Services University of Health Sciences

<sup>2</sup> Naval Medical Research Center

**MHSRS-542    Poster Session: 1 - Poster # 123**

**Development of Novel Statin Formulations to Treat Reperfusion Injury**

Gianny Rossini

Southwest Research Institute

**MHSRS-636    Poster Session: 1 - Poster # 124**

**Characterizations and Outcomes of Upper Extremity Amputees**

David Tennent, MD<sup>1</sup>, Joshua Wenke, PhD<sup>2</sup>, Jessica Rivera, MD<sup>2</sup>, Chad Krueger, MD<sup>1</sup>

<sup>1</sup> San Antonio Military Medical Center, San Antonio, TX

<sup>2</sup> Institute of Surgical Research, San Antonio, TX



**MHSRS-753 Poster Session: 1 - Poster # 125**

**Enhanced Nerve Regeneration and Functional Recovery by Minimizing Intraneural Scarring using a Semi-Permeable Nanofiber Wrap.**

Dr. Karim Sarhane

**MHSRS-789 Poster Session: 1 - Poster # 126**

**Effect of a novel anti-inflammatory drug (dexamethasone liposome) on long-term recovery of ischemia/reperfusion-injured mouse skeletal muscle**

Yu-Long Li<sup>1</sup>, Dong Wang<sup>2</sup>, Dongze Zhang<sup>1</sup>, Fang Yuan<sup>2</sup>, Huiyin Tu<sup>1</sup>, Jinxu Liu<sup>1</sup>, Robert Muellemann<sup>1</sup>

<sup>1</sup> Department of Emergency Medicine, University of Nebraska Medical Center, Omaha, NE, USA

<sup>2</sup> Department of Pharmaceutical Science, University of Nebraska Medical Center, Omaha, NE, USA

**MHSRS-796 Poster Session: 1 - Poster # 127**

**Comparison of Bone Marrow Aspiration Sites in the Spanish Boer Goat - Part of Development of a Tibial Defect Model**

Ms. Cynthia Boehm

**MHSRS-814 Poster Session: 1 - Poster # 128**

**Risk Factors for Late Amputation in Combat-Related Pilon Fractures**

CPT Husain Bharmal, MD, MC, USA, LT Louis Lewandowski, MD, MC, USN,

LT Benjamin Chi, MD, MC, USN

Department of Orthopaedics, Walter Reed National Military Medical Center

**MHSRS-836 Poster Session: 1 - Poster # 129**

**MHC Class I Antigen Sharing Between Donors and Recipients Influences the Skin Tolerance of Vascularized Composite Allografts**

Kumaran Shanmugarajah MD, Harrison Powell, David A. Leonard MD, Alex Albritton, Christopher Mallard,

Mark A. Randolph MAS, David H. Sachs MD, Josef M. Kurtz PhD, Curtis L. Cetrulo MD, FACS

Transplantation Biology Research Center, Massachusetts General Hospital and Harvard Medical School,

Building 149, 13th Street, Charlestown, Boston, MA 02129

**MHSRS-844 Poster Session: 1 - Poster # 130**

**Interim Analysis of Long Gap Median Nerve Regeneration Through Novel TissueEngineered Nerve Guides in a Non-Human Primate Model**

Jacqueline M. Bliley<sup>1</sup>, Wesley N. Sivak<sup>1</sup>, Danielle M. Minter<sup>1</sup>, Meghan M. McLaughlin<sup>1</sup>, Rich Liberatore<sup>1</sup>,

Ryan N. Schroth<sup>1</sup>, Han Tsung Liao<sup>1</sup>, Trent Gause<sup>1</sup>, Tyler Simpson<sup>2</sup>, Jim Hokanson<sup>2</sup>, Casey Tompkins-Rhoades<sup>2</sup>, Greg

Williamson<sup>1</sup>, Kia M. Washington<sup>1</sup>, Alex M. Spiess<sup>1</sup>, Douglas Weber<sup>2</sup>, Donald J. Crammond<sup>3,4</sup>,

Kacey G. Marra KG<sup>1,2,3</sup>

<sup>1</sup> Division of Plastic Surgery, University of Pittsburgh, Pittsburgh, PA

<sup>2</sup> Department Bioengineering, University of Pittsburgh, Pittsburgh, PA

<sup>3</sup> McGowan Institute for Regenerative Medicine

<sup>4</sup> Department of Neurological Surgery





**MHSRS-873 Poster Session: 1 - Poster # 131**

**Injectable Keratin-based gel for rhBMP-2 delivery in a critical size defect model**

Stefanie M Shiels, PhD<sup>1</sup>, Seth Tomblyn, PhD<sup>2</sup>, Lindsey Pattison, PhD<sup>2</sup>, Luke Burnett, PhD<sup>2</sup>, Joseph C Wenke, PhD<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

<sup>2</sup> KeraNetics, LLC

**MHSRS-930 Poster Session: 1 - Poster # 132**

**Use of microvascular fragments for improving regeneration in musculoskeletal defects**

Jennifer McDaniel, PhD<sup>1</sup>, Marcello Pilia, PhD<sup>1</sup>, John Walker, MD<sup>2</sup>, Benjamin Corona, PhD<sup>1</sup>,  
Christopher Rathbone, PhD<sup>1</sup>

<sup>1</sup> Extremity Trauma and Regenerative Medicine, US Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> University of Texas Health Science Center at San Antonio, San Antonio, TX

**MHSRS-947 Poster Session: 1 - Poster # 133**

**Microvascular fragments improve vessel density of allograft bone in vivo**

Marcello Pilia, PhD<sup>1</sup>, Jennifer McDaniel, PhD<sup>1</sup>, Christopher Rathbone, PhD<sup>1</sup>

<sup>1</sup> Extremity Trauma and Regenerative Medicine, US Army Institute of Surgical Research, Fort Sam Houston, TX

**MHSRS-953 Poster Session: 1 - Poster # 134**

**Volumetric muscle loss leads to permanent disability following extremity trauma**

Benjamin T. Corona, PhD<sup>1</sup>, Jessica C. Rivera, MD<sup>1</sup>, Johnny G. Owens, MPT<sup>2</sup>, Joseph C. Wenke, PhD<sup>1</sup>,  
Christopher R. Rathbone, PhD<sup>1</sup>

<sup>1</sup> Extremity Trauma and Regenerative Medicine, US Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> Physical Therapy Department, Center for the Intrepid, San Antonio Military Medical Center, San Antonio, TX

**MHSRS-966 Poster Session: 1 - Poster # 135**

**Tribological Effects of IL-1 Stimulation on Cartilage Explants: Impact of Recombinant Human Lubricin (rhPRG4)**

Katherine Larson<sup>1</sup>, Khaled Elsaid, PhD<sup>2</sup>, Tannin Schmidt<sup>3</sup>, Braden Fleming<sup>1</sup>, Gregory Jay, MD<sup>1</sup>

<sup>1</sup> Brown University, Providence, RI

<sup>2</sup> MCPHS University

<sup>3</sup> University of Calgary

**MHSRS-1003 Poster Session: 1 - Poster # 136**

**Development of an Orthotopic Upper-Extremity Vascularized Allotransplant Model in Non-Human Primates**

David A Leonard, MBChB<sup>1,2</sup>, Christopher Mallard, BS<sup>1</sup>, Kumaran Shanmugarajah, MBBS<sup>1,2</sup>,  
Melissa Mastroianni, MD<sup>1,2</sup>, Alexander Albritton, BS<sup>1</sup>, Harisson Powell, BS<sup>1</sup>, Josef M Kurtz, PhD<sup>1,3</sup>,  
Curtis L Cetrulo, Jr, MD, FACS<sup>1,2</sup>

<sup>1</sup> Transplantation Biology Research Center, Massachusetts General Hospital/Harvard Medical School, Boston, MA

<sup>2</sup> Division of Plastic & Reconstructive Surgery, Massachusetts General Hospital/Harvard Medical School, Boston, MA

<sup>3</sup> Department of Biology, Emmanuel College, Boston, MA

**MHSRS-1027 Poster Session: 1 - Poster # 137**

**Extremity injuries predominate in ten years of Royal Navy and Royal Marine casualties sustained**

in combat in Iraq and Afghanistan

LCDR Jowan Penn-Barwell





**MHSRS-1061 Poster Session: 1 - Poster # 138**

**Development of a Swine Model of Bi-Lateral Hind Limb Ischemia Reperfusion and Acute Organ Injury Achieved by Terminal Aortic Balloon Occlusion**

Kira N. Long, MD<sup>1,2</sup>, Capt Thomas A. Heafner, MD<sup>3</sup>, CPT Clayton J. Lewis, MD<sup>3</sup>, Maj Brandon W. Propper, MD<sup>3</sup>, Jerry R. Spencer, RVT<sup>1</sup>, James D. Ross, PhD<sup>1</sup>

<sup>1</sup> 59th Medical Wing, San Antonio, Texas, USA

<sup>2</sup> Tulane University Department of Surgery, New Orleans, LA

<sup>3</sup> San Antonio Military Medical Center, San Antonio, TX

**MHSRS-1073 Poster Session: 1 - Poster # 139**

**Expanded Autologous Minced Muscle Grafts Promote De Novo Regeneration after Volumetric Muscle Loss**

Catherine L. Ward, Koyal Garg, Benjamin T. Corona

Extremity Trauma and Regenerative Medicine United States Army Institute of Surgical Research

3698 Chambers Pass, Bldg 3611 Fort Sam Houston, TX 78234

**MHSRS-1131 Poster Session: 1 - Poster # 140**

**Keratin Hydrogels as a Delivery System for Muscle Regeneration**

Juliana Passipieri<sup>1</sup>, Hannah Baker<sup>1</sup>, Trevor Ham<sup>2</sup>, Caroline Stewart<sup>3</sup>, Seth Tomblyn<sup>4</sup>, Justin Saul<sup>2</sup>, George Christ<sup>1</sup>

<sup>1</sup> Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC

<sup>2</sup> Miami University, Department of Chemical, Paper, and Biomedical Engineering, Oxford, OH

<sup>3</sup> University of Virginia, Charlottesville, VA

<sup>4</sup> KeraNetics, LLC, Winston-Salem, NC

**MHSRS-1154 Poster Session: 1 - Poster # 141**

**Treatment of Extremity Compartment Syndrome Using Autologous Bone Marrow Mononuclear Cells in Swine**

Hua Xie, MD<sup>1,2</sup>, Cynthia Gregory, PhD<sup>1,3</sup>, Michael Rutten, PhD<sup>1,2</sup>, Bo Zheng, MD<sup>1,2</sup>, Rose Merten, BS<sup>1,2</sup>,

Jeff Teach, BSN<sup>2</sup>, Ping-Cheng Wu, MS<sup>2</sup>, Bryan Laraway, BS<sup>1,2</sup>, Annabeth Rose, BS<sup>1,2</sup>, Teresa Malarkey, CVT<sup>1,2</sup>,

James Hunt, BS<sup>1,2</sup>, Rebecca Sarao, BS<sup>2</sup>, Kenton Gregory, MD<sup>1,2,3</sup>

<sup>1</sup> Center for Regenerative Medicine, Oregon Health & Science University

<sup>2</sup> Oregon Medical Laser Center, Providence St Vincent Medical Center

<sup>3</sup> Oregon Biomedical Engineering Institute

**MHSRS-1185 Poster Session: 1 - Poster # 142**

**Early detection of Heterotopic Ossification using Raman imaging**

Dr. Zachary Taylor

## **TRAUMA CARE - HEMORRHAGE CONTROL AND RESUSCITATION**

**MHSRS-39 Poster Session: 1 - Poster # 143**

**C1 inhibitor improves survival, reduces resuscitation fluid requirement and tissue damage in swine model of traumatic hemorrhage**

Jurandir J. Dalle Lucca<sup>1\*</sup>, Jessica Slack<sup>2</sup>, Milomir Simovic<sup>2</sup>, Kevin Waldrep<sup>3</sup>, Jill Sondeen<sup>2</sup>, Michael Dubick<sup>2</sup>

<sup>1</sup> Inflammation Modulation of Trauma Program 59 Medical Wing, Office of the Chief Scientist, Wilford Hall Ambulatory Surgical Center JBSA Lackland, TX 78236

<sup>2</sup> U.S. Army Institute of Surgical Research JBSA - Fort Sam Houston, TX 78234

<sup>3</sup> UTHSCSA Department of Surgery 7703 Floyd Curl Drive Mail Code 7840, San Antonio TX 78229-3900

\* Corresponding and first author



**MHSRS-57      Poster Session: 1 - Poster # 144**

**A Randomized Trial of Intravenous Hydroxocobalamin Compared to Whole Blood for Hemorrhagic Shock**

Vikhyat Bebar, MD<sup>1</sup>, Normalynn Garrett, PhD<sup>2</sup>, Susan Boudreau, BSN<sup>2</sup>, Maria Castaneda, MS<sup>2</sup>,  
Lee Ann Zarzabal, MS<sup>3</sup>

<sup>1</sup> Department of Emergency Medicine, San Antonio Military Medical Center, San Antonio, TX

<sup>2</sup> CREST Program, Wilford Hall Ambulatory Surgical Center, Lackland AFB, TX

<sup>3</sup> Geneva Foundation, San Antonio, TX

**MHSRS-92      Poster Session: 1 - Poster # 145**

**The Effects Of A C1 Inhibitor On Inflammatory Responses In Brain From Swine Subjected To Traumatic Hemorrhage**

Michael A Dubick, Yansong Li, Dana L Grubbs, Johnny L Barr, Jurandir J Dalle Lucca

U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston, TX 78234

**MHSRS-102      Poster Session: 1 - Poster # 146**

**Centhaquin an effective resuscitative agent for hypovolemic shock**

Anil Gulati

**MHSRS-141      Poster Session: 1 - Poster # 147**

**A Micellar Colloid is Superior to Albumin for Resuscitation**

Cuthbert Simpkins, MD

Vivacelle Bio, Inc.

**MHSRS-149      Poster Session: 1 - Poster # 148**

**Comparisons of Normal Saline and Lactated Ringer's in Normal and Hypotensive Resuscitation after Hemorrhagic Shock in Pigs**

Wenjun Martini, Kevin Chung\*, Michael Dubick

U.S. Army Institute of Surgical Research, JBSA, Ft Sam Houston, TX 78234

\* Presenter

**MHSRS-219      Poster Session: 1 - Poster # 149**

**A Comparison of Fibrinogen and Prothrombin Complex Concentrates to Correct the Coagulopathy of Trauma in a Rabbit Model of Hemorrhagic Shock**

CDR Matthew Hannon, MD<sup>1</sup> LT Jacob Quail, MD<sup>1</sup> Capt Cara Pugliese, DVM<sup>2</sup> Kejian Chen, MD, PhD<sup>2</sup>

Heidi Shorter<sup>2</sup> Ronald Jackson, PhD<sup>2</sup>

<sup>1</sup> General Surgery Department, Naval Medical Center San Diego

<sup>2</sup> Clinical Investigation Department, Naval Medical Center San Diego

**MHSRS-222      Poster Session: 1 - Poster # 150**

**Validation of an ovine model of Acute Traumatic Coagulopathy**

Michael C. Reade, MBBS DPhil<sup>1,3</sup>, Natasha van Zyl, BVSc<sup>2,3</sup>, Elissa M. Milford, MBBS<sup>1,2,3</sup>, Kiran Shekar, MBBS<sup>2</sup>,  
John Paul Tung, PhD<sup>2</sup>, Kimble R. Dunster<sup>2</sup>, Sara Diab<sup>2</sup>, John F Fraser MBChB PhD<sup>2,3</sup>

<sup>1</sup> Royal Australian Army Medical Corps, Brisbane, Australia

<sup>2</sup> Critical Care Research Group, Prince Charles Hospital, Brisbane, Australia

<sup>3</sup> University of Queensland, Brisbane, Australia



**MHSRS-287 Poster Session: 1 - Poster # 151**

**When randomized trauma trials and bias collide: The trouble with subgrouping on surrogates for severity**

Deborah del Junco, PhD<sup>1</sup>, Eileen Bulger, MD<sup>2</sup>, Erin Fox, PhD<sup>1</sup>, John Holcomb, MD<sup>1</sup>, Karen Brasel, MD, MPH<sup>3</sup>, David Hoyt, MD<sup>4</sup>, James Grady, DrPH<sup>5</sup>, Sarah Duran, MS<sup>1</sup>, Patricia Klotz, RN<sup>2</sup>, Michael Dubick, PhD<sup>6</sup>, Charles Wade, PhD<sup>1</sup>

<sup>1</sup> University of Texas Health Science Center, Department of Surgery, Houston, TX

<sup>2</sup> University of Washington, Department of Surgery, Seattle, WA

<sup>3</sup> Medical College of Wisconsin, Department of Surgery, Milwaukee, WI

<sup>4</sup> American College of Surgeons, Chicago, IL

<sup>5</sup> University of Connecticut Health Center, Institute for Clinical and Translational Science, Farmington, CT

<sup>6</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-322 Poster Session: 1 - Poster # 152**

**Evaluation of rapid wound sealing for control of junctional hemorrhage**

Alex St. John, MD, Xu Wang, MD, Esther Lim, BS, Susan Stern, MD, Nathan White, MD  
Division of Emergency Medicine, University of Washington, Seattle, WA, USA

**MHSRS-349 Poster Session: 1 - Poster # 153**

**Splenectomy Appears Necessary for Creating a Lethal Uncontrolled Hemorrhage Model with Limited Resuscitation in Swine**

Bijan S. Kheirabadi, Irasema B. Terrazas, Nahir Miranda, Mary D. Gonzales, Jill L Sondeen. Michael A. Dubick  
U.S. Army Institute of Surgical Research, Fort Sam Houston, TX 78234

**MHSRS-485 Poster Session: 1 - Poster # 154**

**Test and Evaluation of Compression Bandages Using a Human Tissue Equivalent Mannequin Model**

Bridget Endler, MS, Duane Cox  
Naval Medical Research Unit San Antonio, San Antonio, TX

**MHSRS-527 Poster Session: 1 - Poster # 155**

**In trauma, standard ROTEM and TEG results are not similar**

Sandro Rizoli, MD, PhD<sup>1</sup>, Adic Perez Sanchez, MD<sup>1</sup>, Pang Shek, PhD<sup>2</sup>, Richard Grodecki, MD<sup>2</sup>, Henry Peng, PhD<sup>2</sup>  
<sup>1</sup> St Michael's Hospital, University of Toronto, Toronto, Ontario, Canada

<sup>2</sup> Defence Research and Development Canada, Toronto Research Centre, Toronto, Ontario, Canada

**MHSRS-625 Poster Session: 1 - Poster # 156**

**The Use of the Abdominal Aortic and Junctional Tourniquet (AAJT) Versus Combat Gauze (CG) in a Porcine Hemicorporectomy Model**

Bradford Reynolds<sup>1</sup>, Steven Shiver<sup>1</sup>, Steven Holsten<sup>1</sup>, John E. Lowry<sup>2</sup>, Charles Moore<sup>1</sup>, Troy Akers<sup>1</sup>, James Black<sup>1</sup>, Stefan Kazacos<sup>1</sup>, Matthew Lyon<sup>1</sup>

<sup>1</sup> Georgia Regents University

<sup>2</sup> Dwight David Eisenhower Army Medical Center

**MHSRS-645 Poster Session: 1 - Poster # 157**

**The Natural History and Effect of Resuscitation Ratio On Coagulation After Trauma**

Lucy Z. Kornblith MD, Matthew E. Kutcher MD, Benjamin M. Howard MD MPH, Eric M. Campion, MD  
Ryan F. Vilardi MS, Brittney J. Redick BA, Mary F. Nelson RN MPA, Mitchell Jay Cohen MD  
University of California San Francisco, San Francisco General Hospital, San Francisco, CA



**MHSRS-720    Poster Session: 1 - Poster # 158**

**Optimization of microvascular perfusion recovery from hemorrhage with active plasma expanders resuscitation – in vivo studies in the hamster**

Amy G. Tsai<sup>1</sup>, Fantao Meng<sup>2</sup>, Judith Martini<sup>3</sup>, Pedro Cabrales<sup>1</sup>, Seetharama A. Acharya<sup>2</sup>, Marcos Intaglietta<sup>1</sup>

<sup>1</sup> Department of Bioengineering, University of California, San Diego, La Jolla, CA, USA

<sup>2</sup> Hematology Division, Department of Medicine, Albert Einstein College of Medicine of Yeshiva University, Bronx, NY, USA

<sup>3</sup> Department of Anesthesia and Intensive Care Medicine, Medical University of Innsbruck, Austria

**MHSRS-741    Poster Session: 1 - Poster # 159**

**Beneficial effects of ‘pre-hospital’ vs immediate ‘in-hospital’ blood products during resuscitation in two models of severe military injury**

Dr. Emrys Kirkman

**MHSRS-800    Poster Session: 1 - Poster # 160**

**Is The Use Of Hydroxyethyl Starch Solutions Safe In Trauma Patients?**

Dr. Casey Allen

**MHSRS-815    Poster Session: 1 - Poster # 161**

**Micro-thromboelastography: validation of technology for portable and robust diagnostics in transfusion therapy**

J.K. Fisher<sup>1</sup>, R. Judith<sup>2</sup>, R.M. Taylor<sup>1,2</sup>, R. Superfine<sup>1,2</sup>, M. Falvo<sup>2</sup>

<sup>1</sup> Rheomics Inc.

<sup>2</sup> Physics and Astronomy, University of North Carolina at Chapel Hill

**MHSRS-827    Poster Session: 1 - Poster # 162**

**Modulation of acute inflammation using bio-inspired glycocalyx analogs**

Dr. Nathan Shapiro

**MHSRS-833    Poster Session: 1 - Poster # 163**

**Does Pfc Improve Resuscitation Outcome In Hemorrhagic Shock? Evaluating Hemodynamic, Acid-Base, And Inflammatory Markers In A Rabbit Model**

Penny S Reynolds, PhD, Bruce D Spiess MD

Department of Anesthesiology, Virginia Commonwealth University Medical Center

**MHSRS-889    Poster Session: 1 - Poster # 164**

**Isolated primary blast injury is not associated with acute coagulopathy of trauma in pigs**

Nicolas PRAT<sup>1,2</sup> Robbie MONTGOMERY<sup>1</sup> Andrew CAP<sup>1</sup> Jean-Claude SARRON<sup>2</sup> Casimir DESTOMBE<sup>2</sup>

Philippe MAY<sup>2</sup> Pascal MAGNAN<sup>3</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

<sup>2</sup> French Military Forces Institute of Biomedical Research (IRBA)

<sup>3</sup> French-German Research Institute of Saint-Louis

**MHSRS-915    Poster Session: 1 - Poster # 165**

**POLYTRAUMA, WITHOUT RESUSCITATION, LEADS TO ACUTE LUNG INJURY IN RATS**

Xiaowu Wu, Martin Schwacha, Andrew Cap, Daniel Darlington

U.S. Army Institute of Surgical Research, Fort Sam Houston, TX 78234



**MHSRS-935 Poster Session: 1 - Poster # 166**

**TRANEXAMIC ACID MAY HAVE UNDESIRABLE ACTIONS IN SOME TRAUMA PATIENTS**

Dr. Evan Valle

**MHSRS-975 Poster Session: 1 - Poster # 167**

**Detection of Coagulation Abnormalities Using a Handheld Thromboelastograph**

Dr. Matthew Pearce

**MHSRS-982 Poster Session: 1 - Poster # 168**

**Effects of resuscitation fluids on endothelial glycocalyx (EG) and microvascular permeability studied by intravital microscopy: Integration of systemic and local parameters in vivo**

Ivo, Torres Filho, MD PhD, Luciana, Torres, PhD, Christi, Salgado, BS, Celina, Valdez, BS, Jill, Sondeen, PhD, Michael, Dubick, PhD

U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-1088 Poster Session: 1 - Poster # 169**

**In Vivo Microvascular Effects Associated With Prehospital 0.9% Saline (Ns) And 3% Hypertonic Saline (Hts) Resuscitation Regimen In A Hemorrhagic Shock (Hs) Model In Rats**

Christi Salgado, Celina Valdez, Jill Sondeen, PhD, Michael Dubick, PhD, Ivo Torres Filho, MD, PhD

Damage Control Resuscitation, U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-1092 Poster Session: 1 - Poster # 170**

**Hydrophobically-Modified Chitosan Foam: Description and Efficacy**

Matthew B. Dowling, PhD<sup>1</sup>, William Smith<sup>2</sup>, Peter Balogh<sup>2</sup>, Michael J. Duggan, DVM<sup>2</sup>, Ian C. MacIntire<sup>3</sup>, Erica Harris<sup>1</sup>, Srinivasa R. Raghavan, PhD<sup>3</sup>, LTC David R. King, MD<sup>2</sup>

<sup>1</sup> Fischell Department of Bioengineering, University of Maryland, College Park, MD 20742

<sup>2</sup> Department of Emergency Surgery, Trauma and Critical Care, Massachusetts General Hospital, Boston, MA 08174

<sup>3</sup> Department of Chemical & Biomolecular Engineering, University of Maryland, College Park, MD 20742

**MHSRS-1165 Poster Session: 1 - Poster # 171**

**Analysis of effectiveness of Terlipressin and Ephedrine in a Hemorrhagic Shock Model**

MAJ Murat Durusu

**MHSRS-1186 Poster Session: 1 - Poster # 172**

**The THOR Tourniquet**

Mr. Anton Hunt

## **TRAUMA CARE - PREHOSPITAL AND TACTICAL COMBAT CASUALTY CARE**

**MHSRS-53 Poster Session: 1 - Poster # 173**

**Development of a novel large animal model of acute traumatic ventral spinal cord injury: initial experience**

CPT Rory Petteys

**MHSRS-76 Poster Session: 1 - Poster # 174**

**Test and Evaluation of the Saros™ Battlefield Portable Oxygen Concentrator at Ambient Pressure Extremes**

David Fothergill, PhD, Allison Loiselle, BSc

Naval Submarine Medical Research Laboratory, Box 900, Groton, CT



**MHSRS-90      Poster Session: 1 - Poster # 175**

**Effectiveness of the Combat Pelvic Protection System in the Prevention of External Genital Injuries: An Observational Study**

John S. Oh MD<sup>1</sup>, Nhan V. Do MD<sup>2</sup>, Mary Clouser PhD, MPH<sup>3</sup>, Jennifer Phillips, MPH<sup>3</sup>, Adrian Katschke<sup>1</sup>, Jon Clasper MBA DPhil DM FRCSEd<sup>4</sup>, Eric J. Kuncir, MD, MS, FACS<sup>5</sup>

<sup>1</sup> Landstuhl Regional Medical Center, APO AE 09180

<sup>2</sup> Office of the Surgeon General, Falls Church, VA 22041

<sup>3</sup> Naval Health Research Center, San Diego, CA 92134

<sup>4</sup> Imperial College London, South Kensington Campus, United Kingdom

<sup>5</sup> Naval Medical Center, San Diego, CA 92134

**MHSRS-192      Poster Session: 1 - Poster # 176**

**Performance of life-saving interventions in trauma patients is associated with data quality in the prehospital and clinical environments**

Nehemiah T. Liu MS<sup>1</sup>, John B. Holcomb MD<sup>2</sup>, Charles E. Wade PhD<sup>2</sup>, Mark I. Darrah PhD<sup>3</sup>, Jose Salinas PhD<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> Center for Translational Injury Research, Department of Surgery, University of Texas Health Science Center at Houston, Houston, TX

<sup>3</sup> Athena GTX, Inc.

**MHSRS-238      Poster Session: 1 - Poster # 177**

**IV access in the prehospital settings, what can be learned from point of injury experience**

Lt Col Elon Glassberg, Israeli Defense Force

**MHSRS-239      Poster Session: 1 - Poster # 178**

**Eye injury in the Israeli Defense Force: “An ounce of prevention is worth a pound of cure”**

Lt Col Elon Glassberg, Israeli Defense Force

**MHSRS-254      Poster Session: 1 - Poster # 179**

**Profile of Early Immune and Coagulation Response to Trauma at a Level 1 Trauma Center in San Antonio Texas**

Jurandir J. Dalle Lucca<sup>1\*</sup>, Anthony Pusateri<sup>2</sup>, Manoj Valiyaveetil<sup>3</sup>, Jessica Slack<sup>3</sup>, Janet McCarthy<sup>4</sup>, Martin Schwacha<sup>4</sup>, Andrew Cap<sup>3</sup>, David Baer<sup>3</sup>, Michael Dubick<sup>3</sup>

<sup>1</sup> Joint Inflammation Modulation of Trauma Program, 59 Medical Wing, Office of the Chief Scientist, Wilford Hall Ambulatory Surgical Center JBSA Lackland, TX 78236

<sup>2</sup> U.S. Army Institute of Surgical Research JBSA - Fort Sam Houston, TX 78234

<sup>3</sup> DoD Hemorrhage and Resuscitation Research and Development Program Combat Casualty Care Research Program US Army Medical Research and Materiel Command

<sup>4</sup> UTHSCSA Department of Surgery 7703 Floyd Curl Drive Mail Code 7840 San Antonio TX 78229-3900

\* Corresponding and first author

**MHSRS-267      Poster Session: 1 - Poster # 180**

**Respiratory Pump Contributes to Increased Physiological Reserve for Compensation during Simulated Hemorrhage**

Gary W. Muniz<sup>1</sup>, Paula Y. S. Poh, MA<sup>2</sup>, Robert Carter III, PhD<sup>1</sup>, Carmen Hinojosa-Laborde, PhD<sup>1</sup>, Victor A. Convertino, PhD<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Ft Sam Houston

<sup>2</sup> University of Illinois at Urbana-Champaign





**MHSRS-270 Poster Session: 1 - Poster # 181**

**Variability in mechanisms associated with tolerance to progressive reductions in central blood volume: role for the compensatory reserve index**

Victor A. Convertino, PhD, Carmen Hinojosa-Laborde, PhD, Robert Carter III, PhD  
U.S. Army Institute of Surgical Research, Ft Sam Houston, TX

**MHSRS-272 Poster Session: 1 - Poster # 182**

**Gender Differences in Muscle Sympathetic nerve activity (MSNA) and Arterial Pressure Oscillations During Progressive Central Hypovolemia**

Robert Carter III, PhD, Carmen Hinojosa-Laborde, PhD, Victor A. Convertino, PhD  
U.S. Army Institute of Surgical Research, Ft Sam Houston, TX

**MHSRS-361 Poster Session: 1 - Poster # 183**

**The Vitamin B12 Analog Cobinamide is an Effective Hydrogen Sulfide Antidote in a Lethal Rabbit Model**

Sarah Azer<sup>1</sup>, Sebastian BENAVIDES MD<sup>1</sup>, Sari MAHON PhD<sup>1</sup>, Jangwoon LEE PHD<sup>1</sup>, David YOON MS<sup>1</sup>,  
David MUKAI BS<sup>1</sup>, Marius VISEROI MD<sup>1</sup>, Adriano CHAN BS<sup>3</sup>, Jingjing JIANG PhD<sup>3</sup>, Navneet NARULA MD<sup>4</sup>,  
Charlotte ALEXANDER MS<sup>1</sup>, Gerry BOSS MD<sup>3</sup>, Matthew BRENNER MD<sup>1,2</sup>

<sup>1</sup> Beckman Laser Institute, University of California, Irvine, CA, USA

<sup>2</sup> Division of Pulmonary and Critical Care Medicine, Department of Medicine, University of California, Irvine, CA, USA

<sup>3</sup> Department of Medicine, University of California, San Diego, La Jolla, CA, USA

<sup>4</sup> Department of Pathology and Laboratory Medicine, Weill Cornell Medical College, New York, NY, USA

**MHSRS-455 Poster Session: 1 - Poster # 184**

**Intelligent ultrasound methods for automated abdominal blood pool detection**

Balasundar Raju<sup>1</sup>, Shiwei Zhou<sup>1</sup>, Shougang Wang<sup>1</sup>, Amjad Soomro<sup>1</sup>, Jingping Xu<sup>1</sup>, Zachary Forbes<sup>1</sup>,  
Mckee Poland<sup>2</sup>, David Houston<sup>2</sup>, Tony Gades<sup>2</sup>

<sup>1</sup> Philips Research

<sup>2</sup> Philips Healthcare

**MHSRS-498 Poster Session: 1 - Poster # 185**

**Characterization and Comparison of Combat-Related Injuries in Women During OIF and OEF**

Judy L. Dye, MS; Susan L. Eskridge, PhD; Mary C. Clouser, PhD; Michael R. Galarneau, MS  
Naval Health Research Center

**MHSRS-504 Poster Session: 1 - Poster # 186**

**Prehospital use of Hemostatic Bandages and Tourniquets; Translation from Military Experience to Implementation in Civilian Trauma Care**

John Zietlow BA<sup>1</sup>, Scott Zietlow MD<sup>2,3</sup>, David Morris MD<sup>2</sup>, Kathleen Berns RN<sup>4</sup>, Donald Jenkins MD<sup>2</sup>

<sup>1</sup> Creighton University, Omaha, NE

<sup>2</sup> Division of Trauma, Critical Care and General Surgery, Mayo Clinic, Rochester, MN

<sup>3</sup> Medical Director, Mayo Clinic Medical Transport, Rochester, MN

<sup>4</sup> Mayo Clinic Medical Transport, Rochester, MN





**MHSRS-616 Poster Session: 1 - Poster # 187**

**Brain tissue oxygenation following traumatic brain injury in rodent model using phosphorescence quenching method**

Saad Habib-E-Rasul Mullah, MD, PhD<sup>1</sup>, Anke Scultetus, MD<sup>1,2</sup>, Biswajit Saha, MD<sup>1</sup>

Richard McCarron, PhD<sup>1,2</sup>, Charles Auker, MD, PhD<sup>1,2</sup>, Paula Moon-Massat, DVM<sup>1</sup>

<sup>1</sup> NeuroTrauma Department, Naval Medical Research Center, Silver Spring, MD 20910

<sup>2</sup> Department of Surgery, Uniformed Services University of the Health Sciences, Bethesda, MD 20814

**MHSRS-626 Poster Session: 1 - Poster # 188**

**Needle Thoracostomy for Tension Pneumothorax: The Israeli Defense Force experience**

Nadler R<sup>1</sup>, Dagan S<sup>1,2</sup>, Tien H<sup>4,5</sup>, Cap AP<sup>3</sup>, Glassberg E<sup>1</sup>

<sup>1</sup> Trauma & Combat Medicine Branch, Surgeon General's Headquarters, Medical Corps, Israel Defense Forces, Ramat Gan, Israel

<sup>2</sup> Department of emergency medicine, Ben Gurion University of the Negev, Beer Sheva, Israel

<sup>3</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, Texas, USA

<sup>4</sup> Canadian Armed Forces

<sup>5</sup> Sunnybrook Health Sciences Centre, University of Toronto

**MHSRS-660 Poster Session: 1 - Poster # 190**

**STATfusion: Ultra-Portable, Easy-to-Use Intravenous (IV) Fluid Delivery Device**

Dr. Anup Salgia

**MHSRS-694 Poster Session: 1 - Poster # 191**

**Quantitative Anatomy of the Greater Trochanter and the Common Femoral Artery as to Guide Pelvic Binder and Junctional Tourniquet Placement**

LTC John Ritter, MD<sup>1</sup>, COL (Ret) John F. Kragh, Jr., MD<sup>2</sup>, COL Kirby Gross, MD<sup>2</sup>

<sup>1</sup> San Antonio Military Medical Center, San Antonio, TX

<sup>2</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-724 Poster Session: 1 - Poster # 192**

**The Utility of Routine Chest X-rays During the Initial Stabilization of Trauma Patients**

Steven, Schauer, MD<sup>1</sup>, Peter Cuenca, MD<sup>2</sup>, Michael, Cheung, MD<sup>2</sup>

<sup>1</sup> Baynes-Jones Army Community Hospital

<sup>2</sup> San Antonio Military Medical Center, San Antonio, TX

**MHSRS-749 Poster Session: 1 - Poster # 193**

**Evaluation of Adenosine Lidocaine Magnesium (ALM) as a resuscitation adjunct in models of military trauma**

Sarah Watts, Callie Wilson, Alun Carter, Emrys Kirkman

Biomedical Sciences, DSTL Porton Down, Salisbury, Wiltshire, SP4 0JQ, UK

**MHSRS-776 Poster Session: 1 - Poster # 194**

**Department of Defense Programmatic Overview of Chest Seal Evaluation**

Greggory J. Housler, MS<sup>1</sup>, Kevin Curry, MS<sup>1</sup>, Michael Husband, MS<sup>1</sup>, Richard McCaron, PhD<sup>2</sup>

David Baer, PhD<sup>3</sup>, COL Robert Gerhardt, MD<sup>3</sup>, Daniel O. Kennedy, MS<sup>1</sup>, Francois Arnaud, PhD<sup>2</sup>

<sup>1</sup> U.S. Army Medical Materiel Agency, Ft Detrick, MD

<sup>2</sup> U.S. Naval Medical Research Center (USNMRC), Silver Spring, MD

<sup>3</sup> U.S. Army Institute for Surgical Research (USAISR), Fort Sam Houston, TX



**MHSRS-860    Poster Session: 1 - Poster # 195**

**Military Human Factors Testing and Development of a Rugged Foam Delivery System for Treatment of Noncompressible Abdominal Hemorrhage**

David R King<sup>1</sup>, Upma Sharma<sup>2</sup>, Adam Rago<sup>2</sup>, Greg Zugates<sup>2</sup>, Rany Busold<sup>2</sup>, Marc Helmick<sup>2</sup>, John Beagle<sup>1</sup>, John Marini<sup>2</sup>, Mike Duggan<sup>1</sup>

<sup>1</sup> Massachusetts General Hospital

<sup>2</sup> Arsenal Medical

**MHSRS-958    Poster Session: 1 - Poster # 196**

**Oxygen Flow Rate Requirements in Critically Injured Adults**

Jason McMullan, MD<sup>1</sup>, Kimberly Ward Hart, MS<sup>1</sup>, Chris Barczak, RN<sup>1</sup>, Christopher J Lindsell, PhD<sup>1</sup>, Richard Branson, MSc, RRT<sup>2</sup>, Jay Johannigman, MD<sup>2</sup>

<sup>1</sup> University of Cincinnati, Department of Emergency Medicine

<sup>2</sup> University of Cincinnati, Department of Surgery

**MHSRS-992    Poster Session: 1 - Poster # 198**

**Evaluation of Prehospital Pelvic Binder Usage in US Military Casualties with Pelvic Fractures**

Col Chetan U. Kharod MD, MPH, 1LTC Creighton C. Tubb, MD<sup>2</sup> COL Kirby Gross, MD<sup>3</sup>, COL (ret) John F. Kragh, Jr, MD<sup>4</sup>

<sup>1</sup> San Antonio Uniformed Services Health Education Consortium, Military EMS & Disaster Medicine Fellowship, JBSA-Fort Sam Houston, Texas; and Assistant Professor, Department of Military and Emergency Medicine, Uniformed Services University, Bethesda, Maryland

<sup>2</sup> San Antonio Military Medical Center, Department of Orthopedics & Rehabilitation, JBSA-Fort Sam Houston, TX

<sup>3</sup> U.S. Army Institute of Surgical Research, Joint Trauma System, JBSA-Fort Sam Houston, TX

<sup>4</sup> U.S. Army Institute of Surgical Research, Damage Control Resuscitation, JBSA-Fort Sam Houston, TX

**MHSRS-993    Poster Session: 1 - Poster # 199**

**Delivering Oxygen in High Altitude Helicopter MEDEVAC Missions**

Charles Paschal, Christine Wasner CTR, Nicolle Perez CTR, William Sovitsky, Brian Dacanay CTR, Henry Kobrinski PA-C

U.S. Army Medical Materiel Agency, Ft. Detrick, MD

**MHSRS-1146    Poster Session: 1 - Poster # 200**

**Just-in-time Remotely Mentored Tele-ultrasound Guidance of Junctional Hemorrhage Control**

Major Andrew W Kirkpatrick, CD MD MHSC FRCSC FACS<sup>1,2,3,4</sup>, Jessica McKee, BA, MSc<sup>5</sup>, Colonel (RET) Anthony J LaPorta, MD, FACS<sup>6</sup>

<sup>1</sup> Canadian Forces Medical Services;

<sup>2</sup> Department of Surgery Foothills Medical Centre, Calgary, Alberta

<sup>3</sup> Department of Critical Care Medicine Foothills Medical Centre, Calgary, Alberta

<sup>4</sup> Regional Trauma Services Foothills Medical Centre, Calgary, Alberta

<sup>5</sup> Innovative Trauma Care, Edmonton, Alberta

<sup>6</sup> Professor of Surgery and Military Medicine, Rocky Vista School of Medicine, Parker, Colorado



**MHSRS-1190 Poster Session: 1 - Poster # 201**

**Inter-observer reliability of reporting of Injury Severity Scoring following combat trauma; different perspectives, different values?**

Iain M Smith MB BChir MSc MRCSEd<sup>1,2,3</sup>, David N Naumann MB BChir MRCS<sup>1</sup>, Paul Guyver FRCS<sup>4</sup>, Jonathan Bishop PhD<sup>3</sup>, Jonathan B Lundy MD<sup>5</sup>, Douglas M Bowley MBBS FRCS<sup>1</sup>

<sup>1</sup> Royal Centre for Defence Medicine

<sup>2</sup> 202 (Midlands) Field Hospital

<sup>3</sup> NIHR Surgical Reconstruction & Microbiology Research Centre

<sup>4</sup> Institute of Naval Medicine

<sup>5</sup> United States Army Institute of Surgical Research



# 2014 MHSRS POSTER PRESENTATIONS - POSTER SESSION 2

## BIOINFORMATICS - SUPPORTING WARRIOR CARE

### **MHSRS-74      Poster Session: 2- Poster # 2**

#### **An Advanced Virtual Environment Support Space for Injured Service members**

Mrs. Ashley Fisher

### **MHSRS-336      Poster Session: 2 - Poster # 3**

#### **Results of a Retrospective Electronic AKIN Alert Analysis**

Ian, Stewart, Maj<sup>1</sup>, David, Luellen<sup>2</sup>, Jonathan Sosnov, Maj<sup>1</sup>, Maria, Serio-Melvin, MS<sup>2</sup>, Kevin, Chung, LTC<sup>2</sup>, Jose, Salinas, PhD<sup>2</sup>

<sup>1</sup> San Antonio Military Medical Center, San Antonio, TX

<sup>2</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

### **MHSRS-550      Poster Session: 2 - Poster # 4**

#### **Information standards to improve emergency care : the HL7 Data Elements for Emergency Department Systems (DEEDS)**

Laura Heerman Langford, PhD, RN<sup>1</sup>, Peter J. Park, MD<sup>2</sup>

<sup>1</sup> Homer Warner Center for Informatics Research, Intermountain Healthcare, UT

<sup>2</sup> Department of Emergency Medicine, Naval Medical Center San Diego, San Diego CA

### **MHSRS-848      Poster Session: 2 - Poster # 5**

#### **Bioinformatics and Computer Modeling to Facilitate Management of Swallowing Disorders in Wounded Warriors**

Nancy Solomon, PhD<sup>1</sup>, Angela Dietsch, PhD<sup>1,2</sup>, Katie Dietrich-Burns, MS<sup>1,2</sup>, William Pearson, PhD<sup>3</sup>, Edda Styrmisdottir<sup>4</sup>, Chris Armao, PhD<sup>4</sup>, Laura Cord, MS<sup>1</sup>, WJB Lewis, MS<sup>1</sup>, Gerald Grant, CAPT, DMD<sup>1</sup>, Sid Fels, PhD<sup>5</sup>

<sup>1</sup> Walter Reed National Military Medical Center, Bethesda, MD

<sup>2</sup> Henry M. Jackson Foundation for the Advancement of Military Medicine

<sup>3</sup> Medical College of Georgia/Georgia Regents University

<sup>4</sup> DecisionQ Corporation

<sup>5</sup> University of British Columbia

### **MHSRS-1175      Poster Session: 2 - Poster # 6**

#### **Web-Based Clinical Scenario Repository (CSR) to Improve Patient Safety**

Diego Alanso, Jeff Plourde, Julian Goldman MD

MD PnP Program, Massachusetts General Hospital, Boston, MA

### **MHSRS-1181      Poster Session: 2 - Poster # 7**

#### **OpenICE: An Open, Interoperable Medical Device Integration Platform for Clinical, Engineering, and Technology Research, and App Deployment**

Jeff Plourde, Dave Arney, Julian Goldman, MD

MD PnP Program, Massachusetts General Hospital, Boston, MA



# INFECTIOUS DISEASE AND COMPLICATIONS - WOUNDS/SKIN/SOFT TISSUE INFECTIONS

## **MHSRS-104    Poster Session: 2 - Poster # 8**

### **Proteolytic Regulation of the Intestinal Epithelial Barrier: Mechanisms and Interventions**

Marguerite S. Buzza<sup>1</sup>, Gregory D. Conway<sup>1</sup>, Erik W. Martin<sup>1</sup>, Terez Shea-Donohue<sup>2</sup>, Toni M. Antalis<sup>1</sup>

<sup>1</sup> Dept. of Physiology and Center for Vascular and Inflammatory Diseases, University of Maryland School of Medicine, Baltimore, MD, USA

<sup>2</sup> Dept. of Radiation Oncology and Medicine, University of Maryland School of Medicine, Baltimore, MD, USA

## **MHSRS-175    Poster Session: 2 - Poster # 9**

### **Antifungal Wound Penetration of Amphotericin B and Voriconazole in Two Blast-Injured Combat Casualties**

Kevin S. Akers MD<sup>1,2</sup>, Krista L. Niece<sup>1</sup>, Katrin Mende PhD<sup>3</sup>, Kevin K. Chung MD<sup>1</sup>, Clinton K. Murray<sup>2</sup>

<sup>1</sup> U. S. Army Institute of Surgical Research, JBSA Fort Sam Houston TX 78234-7677

<sup>2</sup> San Antonio Military Medical Center, JBSA Fort Sam Houston TX 78234

<sup>3</sup> Infectious Disease Clinical Research Program, Bethesda MD 20814

## **MHSRS-215    Poster Session: 2 - Poster # 10**

### **Antimicrobial blue light for control of combat-related wound infections**

Dr. Tianhong Dai

## **MHSRS-250    Poster Session: 2 - Poster # 12**

### **Small molecule approaches to eradicate bacterial biofilms and improve wound healing**

Crystal L. Jones, PhD<sup>1</sup>, Mitchell G. Thompson<sup>1</sup>, Yonas Alamneh<sup>1</sup>, Shweta Singh<sup>1</sup>, Rania Abu-Taleb<sup>1</sup>, Yuanzheng Si<sup>1</sup>, Leila Casella<sup>1</sup>, Tyler L. Harris<sup>2</sup>, Roberta J. Melander, PhD<sup>2</sup>, Christian Melander, PhD<sup>2</sup>, Vu Truong, PhD<sup>3</sup>, Jeff Anderl, PhD<sup>3</sup>, Eric Patzer, PhD<sup>3</sup>, LTC Eric J. Wagar, PhD<sup>1</sup>, Daniel V. Zurawski, PhD<sup>1</sup>

<sup>1</sup> Dept. of Wound Infections, Walter Reed Army Institute of Research, Silver Spring, MD

<sup>2</sup> Dept. of Chemistry, North Carolina State University, Raleigh, NC

<sup>3</sup> Ardis Pharmaceuticals, Inc., San Jose, CA

## **MHSRS-278    Poster Session: 2 - Poster # 13**

### **Topical Nanoemulsion Treatment Reduces Bacterial Counts and Inflammation in Methicillin-Resistant Staphylococcus Aureus Infected Wounds**

Suhe Wang, Ph.D<sup>1</sup>, Zhengyi Cao<sup>1</sup>, John Lipuma, MD<sup>1</sup>, Yongyi Fan<sup>1</sup>, Susan Ciotti, Ph.D<sup>2</sup>, James Baker Jr., MD<sup>1</sup>

<sup>1</sup> University of Michigan, Ann Arbor, MI, 48109

<sup>2</sup> Nanobio, Ann Arbor, MI, 48105

## **MHSRS-292    Poster Session: 2 - Poster # 14**

### **The Potential Use of Predatory Bacteria to Control Wound Infections**

Davra Viralkumar<sup>1</sup>, Somdatta Mukherjee<sup>1</sup>, Hanan Gancz<sup>2</sup>, Daniel V Zurawski<sup>2</sup>, Daniel E Kadouri<sup>1</sup>

<sup>1</sup> Department of Oral Biology, Rutgers School of Dental Medicine, Newark, NJ 07101

<sup>2</sup> Department of Wound Infections, Walter Reed Army Institute of Research, Silver Spring, MD 20910

## **MHSRS-307    Poster Session: 2 - Poster # 15**

### **Enhancing Fielded Products: DHP Budget Activity 6.7- Supported Research**

Joan Cmarik, PhD, James B. Phillips, PhD, Patricia A. Reilly, PhD

Office of the Principal Assistant for Acquisition, U.S. Army Medical Research and Materiel Command, Ft. Detrick, MD 21702



**MHSRS-368 Poster Session: 2 - Poster # 16**

**Sideromycins, Novel Antibiotics and Delivery Systems That Specifically Target Infections in Wounded Soldiers**

Marvin Miller, PhD<sup>1</sup>, Yun-Ming Lin, PhD<sup>1</sup>, Manuka Ghosh, PhD<sup>1</sup>, Patricia Miller<sup>1</sup>, Ute Möllmann, PhD<sup>1</sup>, Luke Burnett, PhD<sup>2</sup>, Seth Tomlyn, PhD<sup>2</sup>, Robert Christy, PhD<sup>3</sup>

<sup>1</sup> Hisiri Therapeutics, LLC, Innovation Park at Notre Dame, 1400 E. Angela Blvd, South Bend, IN 46617

<sup>2</sup> KeraNetics, LLC, 200 East First Street, Suite 102, Box #4, Winston Salem, NC 27101

<sup>3</sup> Extremity Trauma Research and Regenerative Medicine, US Army Institute of Surgical Research, 3698 Chambers Pass, BHT-1, Fort Sam Houston, TX 78234

**MHSRS-446 Poster Session: 2 - Poster # 17**

**Conjunctival Goblet Cells Protect the Ocular Surface from Infection by Responding to Toxigenic Compared to Commensal Bacteria**

Darlene Dartt<sup>1,3</sup>, Dayu Li<sup>1,3</sup>, Robin Hodges<sup>1,3</sup>, Michael Gilmore<sup>2</sup>, Meredith Gregory-Ksander<sup>1,3</sup>

<sup>1</sup> Schepens Boston, MA Eye Research Institute/Massachusetts Eye and Ear, Boston MA

<sup>2</sup> Massachusetts Eye and Ear, Boston MA

<sup>3</sup> Department of Ophthalmology, Harvard Medical School, Boston MA

**MHSRS-469 Poster Session: 2 - Poster # 18**

**Therapeutic Activities of Antimicrobial Peptides KS-30 and KR-20 Against Multidrug-Resistant *Acinetobacter baumannii* Wound Infections**

Dr. Xiaorong Feng

**MHSRS-553 Poster Session: 2 - Poster # 19**

**Delivery of broad-spectrum antibiotic with bio-responsive polymer wound dressing**

Alexei Kazantsev, PhD<sup>1</sup>, Joel Gil<sup>2</sup>, Jose Valdes<sup>2</sup>, Stephen Davis<sup>2</sup>, Peter Mariner, PhD<sup>1</sup>

<sup>1</sup> Mosaic Biosciences, Boulder, CO, USA

<sup>2</sup> University of Miami Miller School of Medicine Department of Dermatology & Cutaneous Surgery, Miami, FL, USA

**MHSRS-699 Poster Session: 2 - Poster # 20**

**Comparative Evaluation of Commonly Used Antimicrobial Wound Dressings and Nitric Oxide Treatment of Infected and Non-Infected Full-Thickness Wounds on Swine (*Sus scrofa*)**

MAJ Robert D. Brodnick, PhD<sup>1</sup>, MAJ Jason C. Barnhill, PhD<sup>1</sup>, Lisa M. Pierce, PhD<sup>1</sup>, Karen W. Matsumoto, BS<sup>1</sup>, Michael Lustik, MS<sup>1</sup>, MAJ Sandra VanHorn, MD<sup>1</sup>, COL Christina M. Belnap, MD<sup>2</sup>, Nathan A. Stasko, PhD<sup>3</sup>

<sup>1</sup> Tripler Army Medical Center Department of Clinical Investigation

<sup>2</sup> Tripler Army Medical Center Department of Pathology and Laboratory Services

<sup>3</sup> Novan Therapeutics Inc.

**MHSRS-868 Poster Session: 2 - Poster # 21**

**Antimicrobial Efficacy of a Nitric Oxide-Releasing Drug Candidate in vitro and in vivo Utilizing an Infected Porcine Partial Thickness Burn Wound Model**

Kimberly Coggan, PhD<sup>1</sup>, Joel Gil<sup>2</sup>, Jose Valdes<sup>2</sup>, Ryan True<sup>2</sup>, Michael Solis<sup>2</sup>, Stephen Davis<sup>2</sup>, Nathan Stasko, PhD<sup>2</sup>

<sup>1</sup> Novan Therapeutics, Durham, North Carolina

<sup>2</sup> Department of Dermatology and Cutaneous Surgery, University of Miami Miller School of Medicine, Miami, FL



**MHSRS-894 Poster Session: 2 - Poster # 22**

**The Good, the Bad, the Ugly: the expedited development of an Invasive Fungal Infection (IFI) Clinical Practice Guideline (CPG)**

Jigar Patel, Carlos Rodriguez, Debra Malone  
Walter Reed National Military Medical Center, Bethesda, MD

**MHSRS-895 Poster Session: 2 - Poster # 23**

**Infectious Complications associated with combat related Periarticular Tibia fractures**

CDR(s) Ian L. Valerio, MD, MC, USN<sup>1</sup>, CPT Husain Bharmal, MD, MC, USN<sup>2</sup>

<sup>1</sup> Plastic and Reconstructive Surgery Service, Walter Reed National Military Medical Center

<sup>2</sup> Department of Orthopaedics, Walter Reed National Military Medical Center

**MHSRS-938 Poster Session: 2 - Poster # 24**

**Antibiotic-loaded Keratin Hydrogels Inhibit Infection in a Full-thickness Porcine Excision Wound**

Daniel Roy, PhD<sup>1,2</sup>, Seth Tomblyn, PhD<sup>2</sup>, Mary Ellenburg<sup>2</sup>, Luke Burnett, PhD<sup>2</sup>, Justin Saul, PhD<sup>3</sup>, Robert Christy, PhD<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> KeraNetics, LLC, Winston-Salem, NC

<sup>3</sup> Miami University, Oxford, OH

**MHSRS-940 Poster Session: 2 - Poster # 25**

**Prevalence of Panton Valentine Leukocidin positive and Methicillin Resistant Staphylococcus aureus isolated in the British Field Hospital Laboratory in Afghanistan since 2011**

Emma Hutley<sup>1</sup>, Penelope Johnstone<sup>1</sup>, Jason Biswas<sup>1</sup>, Katie Hardy<sup>2</sup>

<sup>1</sup> Centre Defence Pathology, Royal Centre Defence Medicine, Birmingham, UK

<sup>2</sup> Institute of Microbiology and Infection, University of Birmingham, Birmingham, UK

**MHSRS-1067 Poster Session: 2 - Poster # 26**

**Pilot clinical evaluation of surgical site infections with a novel handheld fluorescence imaging device**

Jo Hoeflok<sup>1</sup>, Liis Teene<sup>2</sup>, Emilie Chamma<sup>2</sup>, Dr. Ralph S. DaCosta<sup>2</sup>

<sup>1</sup> Division of General Surgery and Gastroenterology, Specialized Complex Care, St. Michael's Hospital, Toronto, Ontario, Canada

<sup>2</sup> Princess Margaret Cancer Centre and Techna Institute, University Health Network, Toronto, Ontario, Canada

**MHSRS-1174 Poster Session: 2 - Poster # 27**

**An informatics approach to identify A. baumannii resistance island signatures**

Agnes Chan, Jessica Depew, Yongwook Choi, Derrick E. Fouts  
J. Craig Venter Institute, Rockville, MD





## NEUROTRAUMA - TRAUMATIC BRAIN INJURY

### **MHSRS-48      Poster Session: 2 - Poster # 28**

#### **Prospectively Assessed Clinical Outcomes in Concussive Blast vs. Non-blast Traumatic Brain Injury and in Evacuated vs. Non-Evacuated US Military Personnel: A comparison across Four Distinct Cohorts**

Christine Mac Donald, PhD<sup>1</sup>, Ann Johnson<sup>1</sup>, Linda Wierzechowski RN<sup>2</sup>, Elizabeth Kassner, RN<sup>2</sup>, Tess Stewart, RN<sup>2</sup>, Elliot Nelson, MD<sup>1</sup>, Nicole Werner, PhD<sup>1</sup>, Octavian Adam, MD<sup>3</sup>, Dennis Rivet, MD<sup>3</sup>, John Oh, MD<sup>2</sup>, Stephen Flaherty, MD<sup>2</sup>, David Zonies, MD<sup>2</sup>, Raymond Fang, MD<sup>2</sup>, David Brody, MD PhD<sup>1</sup>

<sup>1</sup> Washington University, Saint Louis, MO

<sup>2</sup> Landstuhl Regional Medical Center, Landstuhl, Germany

<sup>3</sup> Naval Medical Center Portsmouth, Portsmouth, VA

### **MHSRS-123      Poster Session: 2 - Poster # 29**

#### **Investigation of the concussion mechanism: An end-to-end model that translates external measures to internal neurologic injury for head impact**

Melissa Gibbons, PhD, Pi Phohomsiri, PhD, Vladislav Volman, PhD, Jianxia Cui, PhD,

Darrell Swenson, PhD, David Shelley, PhD, Jessica Wong, MS, Kiran Mathews, MS, James Stuhmiller, PhD  
L-3/ATI

### **MHSRS-140      Poster Session: 2 - Poster # 30**

#### **Repeated Low Level Blast Exposure: Human Subjects Studies**

Walter Carr, PHD<sup>1</sup>, Matthew LoPresti, PHD<sup>1</sup>, Gary Kamimori, PHD<sup>1</sup>, James Stone, MD PHD<sup>2</sup>, Charmaine Tate, MD<sup>3</sup>, Elena Polejaeva, BS<sup>4,5</sup>, Lee Ann Young, MA<sup>6</sup>, Angela Yarnell, PHD<sup>1</sup>, Tim Walilko, PHD<sup>6</sup>, Uade da Silva, PHD<sup>5</sup>, Eric Wassermann, MD<sup>4</sup>, Richard McCarron, PHD<sup>5</sup>

<sup>1</sup> Walter Reed Army Institute of Research

<sup>2</sup> University of Virginia

<sup>3</sup> New Zealand Defence Force

<sup>4</sup> National Institute of Neurological Disorders & Stroke

<sup>5</sup> Naval Medical Research Center

<sup>6</sup> Applied Research Associates

### **MHSRS-160      Poster Session: 2 - Poster # 31**

#### **Role Of Transcranial Doppler Ultrasound In The Management Of Wartime Traumatic Brain Injury**

Alexander Razumovsky<sup>1</sup>, Teodoro A. Tigno<sup>2</sup>, Efim Kouperberg<sup>1</sup>, Randy S. Bell<sup>2</sup>, Meryl A. Severson<sup>2</sup>, Francis L. McVeigh<sup>3</sup>, Rocco A. Artmonda<sup>4</sup>

<sup>1</sup> Sentient NeuroCare Services, Inc.

<sup>2</sup> Walter Reed National Military Medical Center

<sup>3</sup> Telemedicine & Advanced Technology Research Center

<sup>4</sup> Georgetown University Medical Center

### **MHSRS-208      Poster Session: 2 - Poster # 33**

#### **Perfluorocarbons (Oxycyte) improves neuronal survival and neurobehavioral recovery after traumatic spinal cord injury.**

Adly Yacoub<sup>1</sup>, Seda Bourikian<sup>2</sup>, Kristina Fernandez<sup>2</sup>, Mary-Grace Hajec<sup>1</sup>, Harold Young<sup>1</sup>, Bruce Mathern<sup>1</sup>

<sup>1</sup> VCU Health System, Department of Neurosurgery

<sup>2</sup> VCU School of Medicine



**MHSRS-266    Poster Session: 2 - Poster # 34**

**The Defense and Veterans Brain Injury Center '15-Year Studies': Update, Progress, and Preliminary Analyses**

Louis M. French<sup>1,2,3,4</sup>, Rael T. Lange<sup>1,2,5</sup>, Tracey A. Brickell<sup>1,2,3</sup>

<sup>1</sup> Defense and Veterans Brain Injury Center, Bethesda, MD, USA

<sup>2</sup> Walter Reed National Military Medical Center, Bethesda, MD, USA

<sup>3</sup> Uniformed Services University of the Health Sciences, Bethesda, MD, USA

<sup>4</sup> Center for Neuroscience and Regenerative Medicine, Bethesda, MD, USA

<sup>5</sup> University of British Columbia, Vancouver, BC, Canada

**MHSRS-343    Poster Session: 2 - Poster # 35**

**A Natural History Approach to Uncomplicated Mounted IED Blast mild Traumatic Brain Injuries**

Jacob Norris<sup>1</sup>, Jay Haran<sup>2</sup>, Daniel Houlihan<sup>3</sup>, Alexis Gage<sup>1</sup>, Ashraful Haque<sup>1</sup>

<sup>1</sup> Neurotrauma Department, Navy Medical Research Center

<sup>2</sup> Navy Experimental Diving Unit

<sup>3</sup> Tufts University, Department of Occupational

**MHSRS-379    Poster Session: 2 - Poster # 36**

**Attitudes Toward Symptom Reporting for Potential Mild Traumatic Brain Injury Among Deployed Navy Personnel**

Emily Schmied<sup>1</sup>, Susan Hilton<sup>2</sup>, Genieleah Padilla<sup>1</sup>, Jennifer McAnany<sup>2</sup>, Marcus Taylor, PhD<sup>1</sup>

<sup>1</sup> Naval Health Research Center, Warfighter Performance Department

<sup>2</sup> Naval Health Research Center, Deployment Health Department

**MHSRS-389    Poster Session: 2 - Poster # 37**

**A Comparative Evaluation of UCH-L1 as a Blood Biomarker for Concussed and Non-Concussed Cohorts in a Combat Zone**

Walter Carr, PhD<sup>1</sup>, Denise Milhorn, PhD<sup>1</sup>, Jonathan Elliot, MD<sup>1</sup>, Nicholas Rogers<sup>1</sup>, Robert Brodnick, PhD<sup>1</sup>, Misha Harrell, DO<sup>2</sup>, Brett Bechtel, MD<sup>1</sup>, Carl Freeman, MD<sup>1</sup>, Bradford Whitcomb, MD<sup>3</sup>, Michael Russell, PhD<sup>4</sup>, Kara Schmid, PhD<sup>5</sup>, Frank Tortella, PhD<sup>5</sup>, Dallas Hack, MD<sup>6</sup>

<sup>1</sup> 1st Marine Logistics Group Forward

<sup>2</sup> 651st Expeditionary Aeromedical Evacuation Squadron

<sup>3</sup> Joint Combat Casualty Research Team

<sup>4</sup> Army Rehabilitation & Reintegration Division

<sup>5</sup> Walter Reed Army Institute of Research

<sup>6</sup> U.S. Army Medical Research and Materiel Command, Ft Detrick, MD

**MHSRS-401    Poster Session: 2 - Poster # 38**

**Global metabolomics profiling reveals metabolic dysregulation, oxidative stress and neurotransmission alteration in rats subjected to mild concussive head injury**

Ying Deng-Bryant, PhD, Lai Yee Leung, PhD, Ryan Readnower, PhD, Weihong Yang, MD, Deborah Shear, PhD, Frank Tortella, PhD

Walter Reed Army Institute of Research

**MHSRS-425    Poster Session: 2 - Poster # 39**

**Reduced Anti-correlations Between Cingulo-opercular and Default Mode Networks in Individuals with Chronic Traumatic Brain Injury Following Strategy-based Reasoning Training**

Kihwan Han, PhD<sup>1</sup>, Sandra B. Chapman, PhD<sup>1</sup>, Daniel C. Krawczyk, PhD<sup>1,2</sup>

<sup>1</sup> Center for BrainHealth, The University of Texas at Dallas, Dallas, TX, USA

<sup>2</sup> Department of Psychiatry, The University of Texas Southwestern Medical Center at Dallas, Dallas, TX, USA



**MHSRS-429    Poster Session: 2 - Poster # 40**

**Confounders of mild traumatic brain injury (mTBI) visual tracking assessment**

Umesh Rajashekar, PhD<sup>1</sup>, Jun Maruta, PhD<sup>1</sup>, Nick Seara<sup>1</sup>, Peter Modera<sup>1</sup>, Vincent Dodson<sup>1</sup>, Jennifer Nauheim<sup>1</sup>, Jianliang Tong, PhD<sup>1</sup>, Lisa A. Spielman, PhD<sup>1</sup>, Jamshid Ghajar, M.D., PhD<sup>1,2</sup>

<sup>1</sup> Brain Trauma Foundation

<sup>2</sup> Stanford University School of Medicine

**MHSRS-452    Poster Session: 2 - Poster # 41**

**Neurosensory assessments of concussion with cortical metrics**

Mark Tommerdahl, Oleg Favorov, Jameson Holden, Eric Francisco, Richard Nguyen  
University of North Carolina

**MHSRS-460    Poster Session: 2 - Poster # 42**

**Assessment of Secure Mobile Messaging Usability for Traumatic Brain Injury**

Holly Pavliscsak, MHSA<sup>1,2</sup>

<sup>1</sup> MPMC TATRC Mobile Health Innovation Center, Ft Gordon, GA

<sup>2</sup> The Geneva Foundation

**MHSRS-545    Poster Session: 2 - Poster # 44**

**The Defense Automated Neurocognitive Assessment (DANA) tool is sensitive to concussive injury in theater**

Corinna Lathan<sup>1</sup>, Emma Roach<sup>1</sup>, Jack Tsao<sup>2</sup>, James Spira<sup>3</sup>, Aimee Alphonso<sup>4</sup>, Monica Tung<sup>4</sup>

<sup>1</sup> AnthroTronix Inc.

<sup>2</sup> United States Navy Bureau of Medicine and Surgery

<sup>3</sup> U.S. Department of Veterans Affairs, National Center for PTSD

<sup>4</sup> Walter Reed National Military Medical Center

**MHSRS-579    Poster Session: 2 - Poster # 45**

**Military Helmets May Provide Little Protection Against Traumatic Brain Injury**

John Lloyd, PhD, Joseph Gutmann, MD

James A. Haley Veterans Hospital, Tampa, FL

**MHSRS-601    Poster Session: 2 - Poster # 46**

**Visual dysfunction in warfighters during different stages following blast and non-blast mTBI**

LTC José E. Capó-Aponte, OD, PhD<sup>1,2</sup>, Kendra Jorgensen-Wagers, PhD<sup>3</sup>, SPC Josue Sosa<sup>1</sup>,

MAJ David V. Walsh, OD, PhD<sup>1</sup>, Gregory Goodrich, PhD<sup>4</sup>, Leonard A. Temme, PhD<sup>1</sup>

<sup>1</sup> Visual Protection and Performance Division, U.S. Army Aeromedical Research Laboratory, 6901 Andrews Ave, Fort Rucker, AL 36330

<sup>2</sup> Optometry Department, Womack Army Medical Center, 2817 Reilly Rd; Stop A, Fort Bragg, NC 28310

<sup>3</sup> Traumatic Brain Injury Clinic, Landstuhl Regional Medical Center, Germany, APO AE 09180

<sup>4</sup> Psychology Service & Western Blind Rehabilitation Center, Veterans Affairs Palo Alto Health Care System, 795 Willow Road Bldg. T-365, Menlo Park, CA



**MHSRS-604    Poster Session: 2 - Poster # 47**

**Functional MRI investigation of compromised neural circuitry associated with emotional threat in Soldier with postconcussion syndrome**

MAJ Michael Dretsch<sup>1,2</sup>, Gopi Deshpande<sup>3</sup>, Tom Denney<sup>3</sup>, Jeff Katz<sup>3</sup>

<sup>1</sup> National Intrepid Center of Excellence, Bethesda, MD

<sup>2</sup> U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL

<sup>3</sup> Auburn University, AL

**MHSRS-612    Poster Session: 2 - Poster # 48**

**Combined hypoxemia and hemorrhagic shock worsen motor but not cognitive functions following penetrating ballistic-like brain injury (PBBi) in rats**

Lai Yee Leung, Ying Deng-Bryant, Jesse Flerlage, Megan Winter, Francis Bustos, Deborah Shear, Frank Tortella  
Brain Trauma Neuroprotection and Neurorestoration, Center for Military Psychiatry & Neuroscience, Walter Reed Army Institute of Research

**MHSRS-619    Poster Session: 2 - Poster # 49**

**Endothelial Glycocalyx Degradation After Repeated Low Intensity Blast Exposure is Implicated in Blast-induced Behavioral Deficits**

Aaron Hall, Mirian Mendoza, Michael Shaughness, Eric Maudlin-Jeronimo, Richard McCarron, Stephen Ahlers  
Neurotrauma Department, Naval Medical Research Center

**MHSRS-624    Poster Session: 2 - Poster # 50**

**Intravenously Administered Nanoparticles Improve Behavioral And Physiological Outcomes Following Blast Trauma**

Pamela VandeVord, PhD<sup>1,3</sup>, William Hubbard<sup>1</sup>, Margaret Lashof-Sullivan<sup>2</sup>, Sujith Sajja<sup>1</sup>, Kristyn Atkins<sup>2</sup>, Christina Hall<sup>1</sup>, Erin Shoffstall<sup>2</sup>, Erin Lavik, ScD<sup>2</sup>

<sup>1</sup> School of Biomedical Engineering and Sciences, Virginia Tech University, Virginia, USA.

<sup>2</sup> Department of Bio medical Engineering, Case Western Reserve University, Cleveland, OH USA

<sup>3</sup> Research Services, Salem VAMC, Salem, VA USA

**MHSRS-650    Poster Session: 2 - Poster # 51**

**Longitudinal profile of sensorimotor deficits following single and repeated projectile concussive injury (PCI)**

Chanyang Rho<sup>1</sup>, Jesse Flerlage<sup>1</sup>, Weihong Yang<sup>1</sup>, Casandra Cartagena, PhD<sup>1</sup>, Angela Yarnell, CPT<sup>2</sup>, Sean Marcsisin, CPT<sup>3</sup>, Victor Zottig, CPT<sup>3</sup>, Kara Schmid, MAJ<sup>1</sup>, Paul Bliese, COL<sup>1</sup>, Frank Tortella, PhD<sup>1</sup>, Deborah A. Shear, PhD<sup>1</sup>

<sup>1</sup> Brain Trauma Neuroprotection and Neurorestoration Branch, Center for Military Psychiatry and Neuroscience, Walter Reed Army Institute of Research, Silver Spring MD

<sup>2</sup> Behavioral Biology Branch, Center for Military Psychiatry and Neuroscience, Walter Reed Army Institute of Research, Silver Spring MD

<sup>3</sup> Division of Experimental Therapeutics, Walter Reed Army Institute of Research, Silver Spring, MD

**MHSRS-681    Poster Session: 2 - Poster # 52**

**Delayed consciousness, sensory-motor deficits, and GFAP levels in repeated concussive impact.**

Angela M. Boutte<sup>1</sup>, Andrea Mountney<sup>1</sup>, David W. Johnson<sup>1</sup>, Angela Yarnell<sup>2</sup>, Frank C. Tortella<sup>1</sup>, Jitendra R. Dave<sup>1</sup>, Deborah A. Shear<sup>1</sup>, Kara E. Schmid<sup>1</sup>

<sup>1</sup> Brain Trauma Neuroprotection and Neurorestoration Branch, Walter Reed Army Institute of Research, Silver Spring, MD

<sup>2</sup> Behavioral Biology Branch, Walter Reed Army Institute of Research, Silver Spring, MD



**MHSRS-692 Poster Session: 2 - Poster # 53**

**Electrical Impedance Spectroscopy Discriminates Acute Brain Injury from Healthy Subjects: Proof-of-Principle as a Portable EKG for the Brain**

Dr. Eric Rosenthal

**MHSRS-697 Poster Session: 2 - Poster # 54**

**L-selectin as a therapeutic target for spinal cord injury**

Noble, Linda, PhD<sup>1,2</sup>, Christopher Sontag, PhD<sup>2</sup>, Sang Mi Lee, PhD<sup>1</sup>, Steven D Rosen, PhD<sup>3</sup>

<sup>1</sup> Department of Neurological Surgery, University of California at San Francisco

<sup>2</sup> Department of Physical Therapy and Rehabilitation Science, University of California at San Francisco

<sup>3</sup> Department of Anatomy, University of California at San Francisco

**MHSRS-739 Poster Session: 2 - Poster # 55**

**Assault as A Red Flag for Adverse Self-Reported Outcomes after Traumatic Brain Injury**

Zhangjie Su, MD, PhD<sup>1,2</sup>, David J Davies, MD<sup>1,2</sup>, Haren E Wijesinghe<sup>1</sup>, David Hacker, MD<sup>3</sup>,

Murugan Sitaraman, MD<sup>4</sup>, Ann Logan, PhD<sup>1,2</sup>, Antonio Belli, MD<sup>1,2</sup>

<sup>1</sup> NIHR Surgical Reconstruction and Microbiology Research Centre, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

<sup>2</sup> College of Medical and Dental Sciences, University of Birmingham, Birmingham, UK

<sup>3</sup> Department of Neuropsychology, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

<sup>4</sup> Department of Neurosurgery, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

**MHSRS-744 Poster Session: 2 - Poster # 56**

**Successful Outcomes following Neurorehabilitation in Military Traumatic Brain Injury Patients in the UK**

Shreshth Dharm-Datta, MRCS, Michael Gough, MRCP, Patrick Porter, BSc, Emer McGilloway, MRCP,

John Etherington, FRCP

Defence Medical Rehabilitation Centre, Headley Court, Epsom, Surrey, KT18 6JW, United Kingdom

**MHSRS-766 Poster Session: 2 - Poster # 57**

**Intracranial Pressure Increase Following Exposure to Blast is Ameliorated by N-Acetylcysteine Amide Administration.**

Usmah Kawoos, Ming Gu, Jason Lankasky, Richard McCarron, Mikulas Chavko

Naval Medical Research Center, Silver Spring, MD

**MHSRS-785 Poster Session: 2 - Poster # 58**

**Imaging Cerebral Microhemorrhages in Military Service Members with Traumatic Brain Injury with Susceptibility Weighted Imaging and Quantitative Susceptibility Mapping**

Karl Soderlund, MD<sup>1</sup>, Wei Liu DSc<sup>2,3</sup>, Justin S Senseney, MS<sup>2,3</sup>, David Joy BS<sup>2,4</sup>, Ping-Hong Yeh PhD<sup>2,3</sup>,

John Graner PhD<sup>2,3</sup>, John Ollinger PhD<sup>2,3</sup>, Tian Liu PhD<sup>5</sup>, Yi Wang PhD<sup>5</sup>, Terrence R. Oakes PhD<sup>2,3</sup>,

Gerard Riedy MD, PhD<sup>2,3</sup>

<sup>1</sup> Walter Reed National Military Medical Center, Bethesda, MD

<sup>2</sup> National Capital Neuroimaging Consortium (NCNC), Bethesda, MD

<sup>3</sup> National Intrepid Center of Excellence (NICoE), Bethesda, MD

<sup>4</sup> The Henry M. Jackson Foundation for the Advancement of Military Medicine, Bethesda, MD

<sup>5</sup> Biomedical Engineering Department, Cornell University, NY



**MHSRS-793 Poster Session: 2 - Poster # 60**

**Cognitive Function and DTI Tractography in OIF/OEF Combat Veterans With Blast-Related Mild Traumatic Brain Injury**

Corey Fernandez, BA<sup>1</sup>, Erin Hazlett, PhD<sup>1,2,3</sup>, Edmund Wong, MS<sup>4</sup>, Dara L. Dickstein, PhD<sup>5</sup>,  
Sam Gandy, MD, PhD<sup>1,2,6,7</sup>, Gregory A. Elder, MD<sup>2,6,7</sup>, Cheuk Y. Tang, PhD<sup>4</sup>, & Effie M. Mitsis, PhD<sup>2,7</sup>

<sup>1</sup> Research and Development, James J. Peters Veterans Affairs Medical Center, Bronx, NY 10468

<sup>2</sup> Department of Psychiatry, Icahn School of Medicine at Mount Sinai, New York, NY 10029

<sup>3</sup> The Mental Illness Research, Education, and Clinical Center, James J. Peters Veterans Affairs Medical Center, Bronx, NY 10468

<sup>4</sup> Department of Radiology, Icahn School of Medicine at Mount Sinai, New York, NY 10029

<sup>5</sup> Department of Neuroscience, Icahn School of Medicine at Mount Sinai, New York, NY 10029

<sup>6</sup> Department of Neurology, Icahn School of Medicine at Mount Sinai, New York, NY 10029

<sup>7</sup> Neurology Service, James J. Peters Veterans Affairs Medical Center, Bronx, NY 10468

**MHSRS-822 Poster Session: 2 - Poster # 61**

**Improving Imaging of Diffuse Axonal Injury in Traumatic Brain Injury**

Zora Kikinis<sup>1</sup>, Caryn L. Porter<sup>2</sup>, Ofer Pasternak<sup>1,3</sup>, Marc Muehlmann<sup>1,4</sup>, Yogesh Rathi<sup>1</sup>, Inga Koerte<sup>1,4</sup>,  
Sharon Peled<sup>3</sup>, Craig Ferris<sup>5</sup>, Bruce S. Kristal<sup>2\*</sup>, Martha E. Shenton<sup>1,3,6\*</sup>

<sup>1</sup> Department of Psychiatry, Brigham and Women's Hospital, and Harvard Medical School, Boston, MA

<sup>2</sup> Department of Neurosurgery, Brigham and Women's Hospital, and Harvard Medical School, Boston, MA

<sup>3</sup> Department of Radiology, Brigham and Women's Hospital, and Harvard Medical School, Boston, MA

<sup>4</sup> Ludwig Maximilians-University, Munich, Germany

<sup>5</sup> Department of Psychology, Northeastern University, Boston, MA

<sup>6</sup> VA Boston Healthcare System, Brockton Campus, Brockton, MA

\* Equal last authorship

**MHSRS-824 Poster Session: 2 - Poster # 62**

**Mild traumatic brain injury is reliably detected with a test battery of oculomotor, vestibular, and reaction time measures**

Dr. Alexander Kiderman, PhD<sup>1</sup>, Dr. Sam Akhavan, MD<sup>2</sup>, Dr. Matt Quigley, MD<sup>2</sup>, Dr. Edward Snell, MD<sup>2</sup>,  
Dr. Robert Sciabassi, MD, PhD<sup>3</sup>, Eric Miller, BS<sup>2</sup>, Missy Bauer, MS, LAT, ATC<sup>2</sup>, Dr. Robin Ashmore, PhD<sup>1</sup>,  
Liza P. Oakes<sup>1</sup>, J. Howison Schroeder<sup>1</sup>, Dr. Kevin M. Kelly, MD, PhD<sup>2</sup>

<sup>1</sup> Neuro Kinetics, Inc.

<sup>2</sup> Allegheny Health Network- Allegheny General Hospital

<sup>3</sup> Computational Diagnostics, Inc.

**MHSRS-839 Poster Session: 2 - Poster # 63**

**Evaluation of Dispersive Ultrasound for Diagnosis of Traumatic Brain Injury**

Catherine Tenn, PhD, Pang Shek, PhD, Norleen Caddy, Michelle Garrett, Yimin Shei  
INTERNATIONAL (NON U.S.)

**MHSRS-850 Poster Session: 2 - Poster # 65**

**Biosmart – A Fast, Sensitive, and Automated Protein Biomarker Analysis System for Real Time TBI Diagnosis**

Qian Sun<sup>1</sup>, Bradley Ledden<sup>1</sup>, Champak Das<sup>1</sup>, Kevin Wang<sup>2</sup>, Linda Papa<sup>3</sup>, Sai Kumar<sup>1</sup>

<sup>1</sup> SFC Fluidics Corp

<sup>2</sup> University of Florida

<sup>3</sup> Orlando Regional Medical Center





**MHSRS-852 Poster Session: 2 - Poster # 66**

**Immuno-Chain Reaction: A Novel Ultrasensitive Assay for Rapid Triaging of Brain Injury**

Bradley Ledden, Sai Kumar

SFC Fluidics, 534 W Research Center Blvd, Ste 260, Fayetteville, AR 72701

**MHSRS-923 Poster Session: 2 - Poster # 67**

**DIAGNOSIS AND TREATMENT OF TRAUMATIC BRAIN INJURY**

Dr. Casey Allen

**MHSRS-924 Poster Session: 2 - Poster # 68**

**TEAM TBI: Relevance of Sleep Assessment and Mobile Health Interventions for Chronic mTBI**

Anne Germain, PhD, Robin Richardson, LCS, Bambang Parmanto, PhD, Wayan Pulantara, MS,

Walt Schneider, PhD, Ron Poropatich, M.D., Anthony Kontos, PhD, Michael Collins, PhD,

David Okonkwo, MD, PhD

University of Pittsburgh, Pittsburgh, PA

**MHSRS-925 Poster Session: 2 - Poster # 69**

**Noninvasive Intracranial Pressure Assessment and Screening System**

Anna M Galea, PhD, Shannon O'Toole, MS, Eric Louis

Vivonics, Inc., Waltham, MA

**MHSRS-976 Poster Session: 2 - Poster # 70**

**Progress of the Brain Injury and Mechanisms of Action of Hyperbaric Oxygen (HBO2) for Persistent Post-Concussive Symptoms after Mild Traumatic Brain Injury (BIMA) Study**

Lindell Weaver, PhD<sup>1,2</sup>, Austin Chhoeu<sup>3</sup>, Anne Lindblad, PhD<sup>4</sup>, Susan Churchill<sup>1</sup>, Steffanie H Wilson, PhD<sup>4</sup>

<sup>1</sup> Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital;

<sup>2</sup> University of Utah School of Medicine, Salt Lake City

<sup>3</sup> US Army Medical Materiel Development Activity (USAMMDA), Hyperbaric Oxygen Research Program Management Office (HBO2 PMO), Fort Detrick, MD

<sup>4</sup> The EMMES Corporation, Rockville, MD

**MHSRS-1010 Poster Session: 2 - Poster # 71**

**Neurological Evaluations within the Brain Injury and Mechanisms of Action of Hyperbaric Oxygen (HBO2) for Persistent Post-Concussive Symptoms after Mild Traumatic Brain Injury (mTBI) Study (BIMA)**

Chris Williams MD<sup>1</sup>, Lindell Weaver PhD<sup>2</sup>, Anne Lindblad PhD<sup>3</sup>, Michael R Wierzbicki, PhD<sup>3</sup>, Douglas Langford<sup>4</sup>

<sup>1</sup> Department of Veterans Affairs, Eastern Colorado Health, Colorado Springs, CO

<sup>2</sup> Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital, Salt Lake City UT; Department of Medicine, University of Utah School of Medicine, Salt Lake UT

<sup>3</sup> The EMMES Corporation, Rockville, MD

<sup>4</sup> Neurology, Evans Army Community Hospital, Ft. Carson, CO

**MHSRS-1038 Poster Session: 2 - Poster # 72**

**DETECT: A Novel Tool for Field Assessment of Mild Traumatic Brain Injury – A Preview of the Future of Multi-Modal Detection of Military Operational Exposures**

Tamara Espinoza, MD<sup>2</sup>, Michelle LaPlaca, PhD<sup>3</sup>, Russell Gore, MD<sup>2</sup>, Brian Liu, MBA<sup>1</sup>, Stephen Smith<sup>1</sup>,

Courtney Crooks PhD<sup>1</sup>, John Brumsfield<sup>3</sup>, Nick Ciaravella<sup>2</sup>, David Wright, MD<sup>2</sup>, Shean Phelps MD, MPH<sup>1</sup>

<sup>1</sup> Emory University School of Medicine

<sup>2</sup> Georgia Institute of Technology

<sup>3</sup> Georgia Tech Research Institute





**MHSRS-1077 Poster Session: 2 - Poster # 73**

**Adaptation, Heart-Rate Variability And Autonomic Nervous System Function In Soldiers With Sequelae Of Mild Traumatic Brain Injury**

Susan Mirow, PhD MD<sup>1</sup>, Steffanie H Wilson, PhD<sup>2</sup>, Wayne C Spelius, Major USAF ret<sup>3</sup>, Lindell W Weaver, MD<sup>4,5</sup>, Susan K Churchill, APRN-NP CHRNC<sup>4</sup>

<sup>1</sup> Department of Psychiatry, University of Utah School of Medicine, Salt Lake City, UT

<sup>2</sup> The EMMES Corporation, Rockville, MD

<sup>3</sup> United States Air Force

<sup>4</sup> Hyperbaric Medicine Department, Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital, Salt Lake City, UT

<sup>5</sup> University of Utah School of Medicine, Salt Lake City, UT

**MHSRS-1086 Poster Session: 2 - Poster # 74**

**Blast Gauge Threshold Settings for Detecting Risk of Blast-induced Neurotrauma**

Lee Ann Young<sup>1</sup>, Jeffery Rogers, PhD<sup>2</sup>, Geoffrey Ling, MD<sup>3</sup>, Timothy Walilko, PhD<sup>4</sup>

<sup>1</sup> Applied Research Associates, Inc.

<sup>2</sup> Google, Inc.

<sup>3</sup> Defense Advanced Research Projects Agency

<sup>4</sup> Applied Research Associates, Inc.

**MHSRS-1113 Poster Session: 2 - Poster # 75**

**Transient Delivery of Adenosine as a Novel Therapy to Prevent Epileptogenesis**

Theresa Lusardi, PhD<sup>1</sup>, David Kaplan, PhD<sup>2</sup>, Detlev Boison, PhD<sup>1</sup>

<sup>1</sup> Robert Stone Dow Neurobiology Laboratories, Legacy Research Institute, Portland, OR

<sup>2</sup> Department of Biomedical Engineering, Tufts University, Medford, MA

**MHSRS-1149 Poster Session: 2 - Poster # 76**

**Neuroimaging of apoptosis and caspase-3 activity in experimental traumatic brain injury (TBI) using positron emission tomography (PET) imaging ligands**

James R. Stone, MD, PhD<sup>1,2</sup>, Jiang He, PhD<sup>1</sup>, Tao Huang, PhD<sup>1</sup>, Miles Lankford<sup>1</sup>, Lori Nelson<sup>1</sup>, Stuart Berr, PhD<sup>1</sup>, Stephen T. Ahlers, PhD<sup>3</sup>

<sup>1</sup> Department of Radiology and Medical Imaging, University of Virginia Health System

<sup>2</sup> Department of Neurological Surgery, University of Virginia Health System

<sup>3</sup> Operational & Undersea Medicine, Naval Medical Research Center

**MHSRS-1176 Poster Session: 2 - Poster # 77**

**Trancranial Doppler measure of persistent cerebral vasomotor reactivity abnormality in service members with chronic mTBI**

Donna Neuges<sup>1</sup>, Alex Razumovsky, Ph.D.<sup>2</sup>, Thomas DeGraba, M.D.<sup>1</sup>

<sup>1</sup> National Intrepid Center of Excellence at Walter Reed National Military Medical Center, Bethesda, MD

<sup>2</sup> Sentient NeuroCare Services and Sentient Medical Systems, Inc., Cockeysville, MD

## **PHYSIOLOGICAL MONITORING**

**MHSRS-189 Poster Session: 2 - Poster # 78**

**PPG Artifact Detection Using Machine Learning Tools with Novel Time Domain Features**

Duy Dao, Jo Woon Chong, PhD, Seyed Mohamad Amin Salehizadeh, MS, Yitzhak Mendelson, PhD, Ki Chon, PhD  
Worcester Polytechnic Institute



**MHSRS-293 Poster Session: 2 - Poster # 79**

**Comparison of noninvasive pH, blood lactate and base excess to assess adequacy of restricted volume resuscitation of swine hemorrhage**

Babs Soller, PhD<sup>1</sup>, Fengmei Zou, PhD<sup>1</sup>, Jill Sondeen, PhD<sup>2</sup>

<sup>1</sup> Reflectance Medical Inc., Westborough, MA

<sup>2</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-375 Poster Session: 2 - Poster # 80**

**Comparison Of Compensatory Reserve Index During Lower Body Negative Pressure And Hemorrhage In Baboons**

Carmen Hinojosa-Laborde, PhD<sup>1</sup>, Jane Mulligan, PhD<sup>2</sup>, Greg Z. Grudic, PhD<sup>2</sup>, Victor A. Convertino, PhD<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> Flashback Technologies, Inc., Boulder, CO

**MHSRS-382 Poster Session: 2 - Poster # 82**

**Rapid-drying SMART Wound Dressing for Quantitative and Dynamic Transcutaneous Oxygen Mapping**

Zongxi Li, PhD<sup>1</sup>, Emmanuel Roussakis, PhD<sup>1</sup>, Pieter G. L. Koolen, MD<sup>2</sup>, Ahmed M. S. Ibrahim, MD<sup>2</sup>,

Kuylhee Kim, MD<sup>2</sup>, Lloyd F. Rose<sup>3</sup>, Jesse Wu<sup>3</sup>, Alexander J. Nichols<sup>1,4,5</sup>, Yunjung Baek<sup>1,6</sup>,

Reginald Birngruber, MD PhD<sup>7</sup>, Gabriela Apiou-Sbirlea, PhD<sup>1</sup>, Robina Matyal, MD<sup>8</sup>, Thomas Huang<sup>8</sup>,

Rodney Chan, MD<sup>3</sup>, Samuel J. Lin, MD<sup>2</sup>, Conor L. Evans PhD<sup>1,4</sup>

<sup>1</sup> Wellman Center for Photomedicine, Harvard Medical School, Massachusetts General Hospital, 149 13th Street, Charlestown, Massachusetts 02129, USA

<sup>2</sup> Division of Plastic Surgery, Harvard Medical School, Beth Israel Deaconess Medical Center, 110 Francis Street Suite 5A, Boston, Massachusetts 02215, USA

<sup>3</sup> Dental and Trauma Research Department, U.S. Army Institute of Surgical Research, 3650 Chambers Pass, Suite B, JBSA –Fort Sam Houston, Texas 78234-7767, USA

<sup>4</sup> Harvard University Program in Biophysics, Building C2 Room 112, 240 Longwood Avenue, Boston, MA 02115, USA

<sup>5</sup> Harvard-MIT Division of Health Sciences and Technology, 77 Massachusetts Avenue E25-519, Cambridge, MA 02139, USA

<sup>6</sup> Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea

<sup>7</sup> University of Lübeck, Institute of Biomedical Optics, Lübeck, Peter Monnik Weg 4, 23562 Lübeck, Germany

<sup>8</sup> Department of Anesthesia, Critical Care and Pain Medicine, Harvard Medical School, Beth Israel Deaconess Medical Center, 330 Brookline Avenue, Boston, Massachusetts 02215, USA

**MHSRS-383 Poster Session: 2 - Poster # 83**

**Correlation of Transcutaneous to Arterial Carbon Dioxide Levels in Shock: A Prospective Observational Study**

Lt Col Leslie Wood

**MHSRS-502 Poster Session: 2 - Poster # 84**

**Do Multiple Prehospital Measurements of Vital Signs Enhance Prediction of Emergency Transfusion in Trauma Patients?**

Peter F. Hu, PhD<sup>1</sup>, Rukmini Ramakrishnan, MS<sup>1</sup>, Shiming Yang, PhD<sup>1</sup>, Eric Hu<sup>1</sup>, Amechi Anazodo, MD MPH<sup>1</sup>,

Cristina Imle, MS<sup>1</sup>, Lauren Hartsy, MS<sup>1</sup>, Catriona Miller, PhD<sup>2</sup>, Stacy Shackelford, MD<sup>2</sup>,

Samuel M. Galvagno, MD PhD<sup>1</sup>, Colin F. Mackenzie, MD<sup>1</sup>

<sup>1</sup> Department of Anesthesiology and Program in Trauma, University of Maryland School of Medicine

<sup>2</sup> U.S. Air Force Center for the Sustainment of Trauma and Readiness Skills



**MHSRS-831 Poster Session: 2 - Poster # 85**

**Respiratory Volume Monitoring Provides a Better Assessment of Respiratory Rate than Capnography-Based Respiratory Rate Monitoring in an Experimental Setting**

Dr. Gary Mullen

**MHSRS-1016 Poster Session: 2 - Poster # 86**

**Optical Continuous Lactate Monitor for Combat Casualty Care**

Weidling, John<sup>1</sup>, De Alonso, Emilia<sup>1</sup>, White, Sean, PhD<sup>1</sup>, Botvinick, Elliot, PhD<sup>1,2</sup>

<sup>1</sup> Beckman Laser Institute 1002 Health Sciences Rd. Irvine CA, 92617

<sup>2</sup> University of California Irvine, Edwards Lifesciences Center for Advanced Cardiovascular Technology, Irvine 92617, CA, USA

**MHSRS-1051 Poster Session: 2 - Poster # 87**

**Monitoring Brain Function With A Real-Time Microscale Smart Sensor**

Chunyan Li, Raj K. Narayan

Feinstein Institute for Medical Research

## **PSYCHOLOGICAL HEALTH AND REHABILITATION AND RECOVERY – PROSTHETICS AND REHABILITATION**

**MHSRS-54 Poster Session: 2 - Poster # 88**

**A neuroprosthesis for maintaining seated balance after spinal cord injury**

Musa L. Audu, Ph.D.<sup>1,2</sup>, Len Marinis, BS<sup>1</sup>, Ronald J. Triolo, Ph.D.<sup>1,2,3</sup>

<sup>1</sup> Department of Biomedical Engineering, Case Western Reserve University, Cleveland, Ohio, USA

<sup>2</sup> Motion Study Laboratory, Louis Stokes Cleveland Department of Veterans Affairs Medical Center, Cleveland, Ohio, USA

<sup>3</sup> Department of Orthopaedics, Case Western Reserve University, Cleveland, Ohio, USA

**MHSRS-139 Poster Session: 2 - Poster # 89**

**Rehabilitation of Multiple-Limb Combat Amputees: Injuries and Functional Outcomes**

Ted Melcer, PhD<sup>1</sup>, Jay Pyo, DO<sup>2</sup>, Jay Walker, BA<sup>1</sup>, Kimberly Quinn, RN MSN<sup>1</sup>, Kameran Neises, BA<sup>1</sup>, Martin Lebedda, RN<sup>2</sup>, Michael R. Galarneau, MS NREMT<sup>1</sup>, Peggy Han MPH<sup>1</sup>

<sup>1</sup> Naval Health Research Center San Diego

<sup>2</sup> Naval Medical Center San Diego, San Diego, CA

**MHSRS-170 Poster Session: 2 - Poster # 90**

**Pudendal Nerve Stimulation and Block by a Wireless-Controlled Implantable Stimulator in Cats**

Changfeng Tai, PhD<sup>1,2</sup>, Guangning Yang, MS<sup>1</sup>, Jicheng Wang, PhD<sup>1</sup>, Bing Shen, PhD<sup>1</sup>, James Roppolo PhD<sup>2</sup>, William de Groat, PhD<sup>2</sup>

<sup>1</sup> Department of Urology, University of Pittsburgh

<sup>2</sup> Department of Pharmacology and Chemical Biology, University of Pittsburgh



**MHSRS-366 Poster Session: 2 - Poster # 91**

**Four-year Health Outcomes of Combat Amputee and Limb Salvage Patients**

Ted Melcer, PhD<sup>1</sup>, Jay Walker, BA<sup>1</sup>, Vibha Bhatnagar, MD MPH<sup>2</sup>, Erin Richard, MPH<sup>2</sup>;  
CDR V. Franklin Sechriest II, MD<sup>3</sup>, Michael R. Galarneau, MS NREMT<sup>1</sup>, Peggy Han MPH<sup>1</sup>

<sup>1</sup> Naval Health Research Center San Diego, San Diego, CA

<sup>2</sup> San Diego Veterans Administration Healthcare System and the University of California San Diego,  
San Diego, CA

<sup>3</sup> Naval Medical Center San Diego, San Diego, CA

**MHSRS-367 Poster Session: 2 - Poster # 92**

**Decision Factors and Outcomes Related to Late-Occurring Amputations Following Combat Injuries**

Ted Melcer PhD<sup>1</sup>, CDR Katerina Gallus MD<sup>2</sup>, CDR Trent Douglas MD<sup>2</sup>, Jay Walker, BA<sup>1</sup>, LT Nicholas Rocco<sup>2</sup>,  
Kameran Neises BA<sup>1</sup>, Michael R. Galarneau, MS, NR EMT<sup>1</sup>, Peggy Han MPH<sup>1</sup>

<sup>1</sup> Naval Health Research Center San Diego, San Diego, CA

<sup>2</sup> Naval Medical Center San Diego, San Diego, CA

**MHSRS-503 Poster Session: 2 - Poster # 93**

**TRICARE Direct Care Hospitalization Costs and Hospital Use for Lower Extremity Combat Amputee and Limb Salvage Patients**

Peggy Han, MPH<sup>1</sup>, Ted Melcer, PhD<sup>1</sup>, CDR V. Franklin Sechriest, MD<sup>2</sup>, Michael Galarneau, MS, NREMT<sup>1</sup>

<sup>1</sup> Naval Health Research Center, San Diego, CA

<sup>2</sup> Naval Medical Center San Diego, San Diego CA

**MHSRS-593 Poster Session: 2 - Poster # 94**

**Anabolic action of pulsatile parathyroid hormone delivery from an implantable device in vivo**

Ming Dang<sup>1</sup>, Amy J. Koh<sup>2</sup>, Laurie K. McCauley, DDS, MS, PhD<sup>2</sup>, Peter Ma, PhD<sup>1,3,4,5</sup>

<sup>1</sup> Macromolecular Science and Engineering Center, University of Michigan, Ann Arbor, MI, 48109-1078

<sup>2</sup> Department of Periodontics and Oral Medicine, University of Michigan, Ann Arbor, MI, 48109-1078

<sup>3</sup> Department of Biologic and Materials Sciences, University of Michigan, Ann Arbor, MI, 48109-1078

<sup>4</sup> Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, 48109-1078

<sup>5</sup> Department of Materials Science and Engineering, University of Michigan, Ann Arbor, MI, 48109-1078

**MHSRS-717 Poster Session: 2 - Poster # 95**

**Heat and Perspiration Management System for Prosthetics**

Matthew Jorgensen, Josh Charest, Michael Leddy, Andrew Frazier  
Johns Hopkins University

**MHSRS-928 Poster Session: 2 - Poster # 96**

**Assessing the safety and efficacy of Schwann cell transplantation in an experimental, cervical contusion spinal cord injury paradigm**

Jiaqiong Wang MD PhD, Claudia Saborit, Jameson Wiener, Everett Wilson, Gabriela De La Cruz,  
Ronald Zambrano, Ramon German, Miguel Martinez, Eva Juarez, Denise Koivisto, Alex Basagoitia,  
Paulo Diaz, Alexander Marcillo, MD, Damien Pearse, PhD

The Miami Project to Cure Paralysis, University of Miami, Miller School of Medicine, Miami, Florida, United States  
of America



**MHSRS-1084 Poster Session: 2 - Poster # 97**

**Reactivation of Dormant Motor Descending Control After Severe Incomplete, and Complete Paralysis Utilizing Epidural and Non-Invasive Spinal Cord Stimulation**

V. Reggie Edgerton, PhD<sup>1,2</sup>, Yury Gerasimenko, PhD<sup>1,3</sup>, Daniel C. Lu, MD<sup>2</sup>,  
Roland Roy, PhD<sup>1,2</sup>

<sup>1</sup> University of California Los Angeles; Depts. of Integrated Biology & Physiology

<sup>2</sup> University of California Los Angeles, Dept. of Neurosurgery, Neurobiology

<sup>3</sup> Pavlov Institute of Physiology, St. Petersburg, Russian

**MHSRS-1142 Poster Session: 2 - Poster # 98**

**Multi-Terrain Evaluation of a Wearable Tactile Feedback System for Prosthetic Gait and Balance Rehabilitation**

Zach B. McKinney, MS<sup>1</sup>, Trevor Kingsbury, MS<sup>2</sup>, Marilynn P. Wyatt, MA<sup>2</sup>, Eric A. Johnson<sup>3</sup>, Martin O. Culjat, PhD<sup>3</sup>,  
Warren S. Grundfest, MD<sup>1</sup>

<sup>1</sup> UCLA Center for Advanced Surgical and Interventional Technology

<sup>2</sup> Naval Medical Center San Diego

<sup>3</sup> Farus LLC

## **PSYCHOLOGICAL HEALTH AND REHABILITATION AND RECOVERY – PTSD IN PRIMARY CARE SETTINGS**

**MHSRS-137 Poster Session: 2 - Poster # 99**

**Pre-, Peri-, and Post-deployment Trajectories of Health over Four Years of Follow-up in a Reserve Population: Focus on Barriers to Treatment and Mental Health Utilization**

Laura Sampson<sup>2</sup>, Gregory H. Cohen<sup>2</sup>, Philip K. Chan<sup>1</sup>, David S. Fink<sup>2</sup>, Marijo Tamburrino<sup>3</sup>, Israel Liberzon<sup>4</sup>, Sandro Galea<sup>2</sup>

<sup>1</sup> Department of Psychiatry, University Hospitals Case Medical Center, Case Western Reserve University, Cleveland, OH

<sup>2</sup> Columbia University, Department of Epidemiology, New York, NY

<sup>3</sup> Department of Psychiatry, University of Toledo, Toledo, OH

<sup>4</sup> Department of Psychiatry, University of Michigan, Ann Arbor, MI

**MHSRS-176 Poster Session: 2 - Poster # 100**

**Leadership Satisfaction Protects Against PTSD during Experiences of Intense Horror**

Shiloh Beckerley, PhD

Naval Health Research Center

**MHSRS-274 Poster Session: 2 - Poster # 101**

**Prescriptive Exercise Therapy Program to Reduce Hyperarousal in a Residential Treatment Program for Active-duty Service Members Diagnosed with Posttraumatic Stress Disorder: An Observational Pilot Study**

Stefania Marzano, MA<sup>1</sup>, Robert Congalton, MS<sup>1</sup>, Justin Campbell, LCDR, PhD<sup>2</sup>, Karen Kelly, PhD<sup>1</sup>

<sup>1</sup> Naval Health Research Center, San Diego, CA

<sup>2</sup> Space and Naval Warfare Systems Command, San Diego, CA



**MHSRS-277 Poster Session: 2 - Poster # 102**

**Non-contact monitoring of sweat pores: a surrogate for autonomic nervous system arousal**

Alan Krzywicki, MS<sup>1</sup>, Kristin Gregor, PhD<sup>2,3</sup>, Michael Suvak, PhD<sup>4</sup>, Thomas Dodson, BA<sup>2</sup>, Bobby Lowery, Jr., BS<sup>4</sup>, Lein Ma, MS<sup>6</sup>, Ann Rasmusson, MD<sup>2,3</sup> & Jide Familoni, PhD<sup>1</sup>

<sup>1</sup> U.S. Army Night Vision and Electronic Sensors Directorate

<sup>2</sup> Women's Health Sciences Division, National Center for PTSD, VA Boston Healthcare System

<sup>3</sup> Department of Psychiatry, Boston University School of Medicine

<sup>4</sup> Suffolk University, Department of Psychology

<sup>5</sup> EOIR Technologies

<sup>6</sup> Kinex, Inc.

**MHSRS-280 Poster Session: 2 - Poster # 103**

**Behind the sample: dropouts, research noncompliance, and the real relationship**

Ann M. Hummel, Ph.D.<sup>1</sup>, Charles J. Gelso, Ph.D.<sup>2</sup>, and Dennis Kivlighan, Ph.D.<sup>2</sup>, Eric B. Spiegel, Ph.D.<sup>3</sup>, Johnna Busa-Knepp, Ph.D.<sup>4</sup>, Emilie Ma, Ph.D.<sup>5</sup>, Rayna Markin, Ph.D.<sup>6</sup>, Stacie Ain, Ph.D.<sup>2</sup>

<sup>1</sup> Naval Medical Center San Diego

<sup>2</sup> University of Maryland

<sup>3</sup> Philadelphia, PA

<sup>4</sup> James Madison University

<sup>5</sup> ReAnKos Center

<sup>6</sup> Villanova

**MHSRS-365 Poster Session: 2 - Poster # 104**

**Development of an Objective, Functional Biomarker of Invisible Wounds of War for Use by Providers**

James Spira, PhD<sup>1</sup>, Laurel King, PhD<sup>2</sup>, Cori Lathan, PhD<sup>3</sup>, CAPT Jack Tsao, MD<sup>4</sup>

<sup>1</sup> Department of Veterans Affairs, Honolulu, HI and John Burns School of Medicine; University of Hawaii

<sup>2</sup> Department of Veterans Affairs, Honolulu, HI

<sup>3</sup> Anthrotronix, Inc. Silver Spring, MD

<sup>4</sup> Navy Bureau of Medicine and Surgery, Arlington VA

**MHSRS-564 Poster Session: 2 - Poster # 105**

**DoD IRB delays: Do they really matter? And if so, why and for whom?**

Michael Freed, PhD, EMT-B<sup>1,2</sup>, Laura Novak<sup>1</sup>, William Killgore, PhD<sup>3,4,5</sup>, Tracey Koehlmoos, PhD<sup>6</sup>, JP Ginsberg, PhD<sup>7,8</sup>, Gina Adam, PhD, MBA, LTC, MS<sup>9,10</sup>, Janice Krupnick, PhD<sup>11</sup>, Sheila Rauch, PhD<sup>12,13</sup>, Albert Rizzo, PhD<sup>14</sup>, Charles Engel, MD, MPH<sup>15</sup>

<sup>1</sup> DoD Deployment Health Clinical Center, Bethesda, MD, USA

<sup>2</sup> Uniformed Services University of the Health Sciences, Bethesda, MD, USA

<sup>3</sup> The University of Arizona, Tucson, AZ, USA

<sup>4</sup> McLean Hospital, Belmont, MA, USA

<sup>5</sup> Harvard Medical School, Boston, MA, USA

<sup>6</sup> Headquarters Marine Corps, Arlington, VA, USA

<sup>7</sup> William Jennings Bryan Dorn VA Medical Center, Charleston, SC, USA

<sup>8</sup> University of South Carolina School of Medicine, Charleston, SC, USA

<sup>9</sup> National Defense University, Washington, DC, USA

<sup>10</sup> U.S. Army Medical Materiel Development Activity, Ft. Detrick, MD, USA

<sup>11</sup> Georgetown University School of Medicine, Washington, DC, USA

<sup>12</sup> University of Michigan Medical School, Ann Arbor, MI, USA

<sup>13</sup> VA Ann Arbor Healthcare System, Ann Arbor, MI, USA

<sup>14</sup> University of Southern California Institute for Creative Technologies, Playa Vista, CA, USA

<sup>15</sup> RAND Corporation, Washington, DC, USA





**MHSRS-847 Poster Session: 2 - Poster # 106**

**Sex Differences in Cardiovascular and Subjective Stress Reactions: Prospective Evidence in a Realistic Military Setting**

Marcus Taylor, PhD<sup>1</sup>, Gerald Larson, PhD<sup>1</sup>, Melissa Hiller Lauby, PhD<sup>2</sup>, Genieleah Padilla, BA<sup>1</sup>, Ingrid Wilson, MS<sup>1</sup>, Emily Schmied, MPH<sup>1</sup>, Robyn Highfill-McRoy, MPH<sup>1</sup>, Charles Morgan III, MD<sup>3</sup>

<sup>1</sup> Naval Health Research Center, San Diego, CA

<sup>2</sup> Naval Special Warfare Center, San Diego, CA

<sup>3</sup> Yale University School of Medicine, New Haven, CT

**MHSRS-948 Poster Session: 2 - Poster # 107**

**Evaluation of an integrative PTSC treatment program for active duty service members**

Salvatore Libretto, PhD, Sandra Gordon, BA, CPC, Lara Hilton, MPH, Courtney Boyd, MA, Weimin Zhang, PhD, Kimberly McConnell, EdD, Meredith Sprengel, MS

Samueli Institute, Alexandria, VA

**MHSRS-1070 Poster Session: 2 - Poster # 108**

**Is Combat Exposure Predictive of Higher Preoperative Stress in Military Members?**

Eric Bopp, LCDR, NC, USN, CRNA<sup>1</sup>; Margaret Ryan, MD, MPH<sup>1</sup>; Dennis Spence, CDR, NC, USN, PhD, CRNA<sup>2</sup>; Daniel Wright, PhD<sup>1</sup>; Joseph Burkard, DNSc, CRNA<sup>3</sup>

<sup>1</sup> Naval Hospital Camp Pendleton

<sup>2</sup> Naval Medical Center San Diego, San Diego, CA

<sup>3</sup> University of San Diego School of Nursing, San Diego, CA

## **PSYCHOLOGICAL HEALTH AND REHABILITATION AND RECOVERY - RESILIENCE**

**MHSRS-109 Poster Session: 2 - Poster # 111**

**Determining the relationships between resilience, life events, support, and mental health outcomes**

in Soldiers with a recent deployment history

Linda H. Yoder, PhD, MBA, RN, AOCN, FAAN

University of Texas at Austin, Austin, TX

**MHSRS-134 Poster Session: 2 - Poster # 112**

**Correlates of Criminal Propensity in Army Populations with and without a History of Deployment to a Combat Zone**

Stephanie Traynham, PhD, Bethany Ranes, PhD

U.S. Army Aeromedical Research Laboratory

**MHSRS-171 Poster Session: 2 - Poster # 113**

**The Role of Resilience and Social Support in Predicting Post-deployment Adjustment in Otherwise Healthy Navy Personnel**

Bryan Weber, PhD<sup>1</sup>, Beverly Roberts, PhD<sup>1</sup>, Tracy Hejmanowski, PhD<sup>2</sup>, Wayne Griffin, PhD<sup>3</sup>, Barbara Lutz, PhD<sup>1</sup>

<sup>1</sup> College of Nursing, University of Florida, Gainesville, FL

<sup>2</sup> Branch Health Clinic, Deployment Health Center, Naval Hospital Jacksonville, Jacksonville, FL

<sup>3</sup> Counseling and Wellness Center, University of Florida





**MHSRS-187    Poster Session: 2 - Poster # 114**

**Care Provider Support Program (CPSP) as a mediator of resiliency and coping among Military Healthcare Personnel**

LTC Christopher Weidlich

**MHSRS-207    Poster Session: 2 - Poster # 115**

**Are New Information and Communication Technologies (ICTs) a Threat to Well-Being?**

Laura Miller, PhD, Laurie Martin, PhD, Douglas Yeung, PhD, Matthew Trujillo, PhD, Martha Timmer, MS, Joshua Breslau, PhD  
RAND Corporation

**MHSRS-357    Poster Session: 2 - Poster # 116**

**Piloting performance enhancement skills and updates to Resilience Training for Basic Combat Training: Program evaluation evidence to support implementation of revised training**

Dr. Melissa Waitsman

**MHSRS-381    Poster Session: 2 - Poster # 118**

**Correlates of Self-Reported Aggression in Expeditionary Sailors**

Emily Schmied<sup>1</sup>, Stephanie Booth-Kewley, PhD<sup>2</sup>

<sup>1</sup> Naval Health Research Center, Warfighter Performance Department

<sup>2</sup> Naval Health Research Center, Deployment Health Department

**MHSRS-537    Poster Session: 2 - Poster # 119**

**Assessment of Mobile Messaging Support of Reintegration**

Holly Pavliscsak, MHSA, Jeanette Little, MS  
TATRC

**MHSRS-773    Poster Session: 2 - Poster # 120**

**The Psychological Sequelae of UK Forces Personnel Ensuing Combat Related Genital Trauma**

Sgt Pride Gaka-Chisoro, Mental Health Nurse, Wg Cdr Davendra Sharma, MD  
Ministry of Defence UK - Defence Medical Services

**MHSRS-794    Poster Session: 2 - Poster # 121**

**Evaluation of Self-Regulation Skills Training for EMT-Paramedic Students**

Meredith Sprengel, Jonathan Gooch, Salvatore Libretto, Dawn Wallerstedt, Meghan O'Connell  
Samueli Institute

**MHSRS-808    Poster Session: 2 - Poster # 122**

**Assessing Family Resilience among Veterans of Iraq and Afghanistan: The Family Resilience Scale - Veterans (FRS-V)**

Erin P. Finley, PhD MPH<sup>1</sup>, Mary Jo V. Pugh, PhD RN<sup>2</sup>, Raymond F. Palmer, PhD<sup>3</sup>

<sup>1</sup> South Texas Veterans Health Care System, San Antonio, Texas, and Division of Hospital Medicine, Department of Medicine, and Department of Psychiatry, University of Texas Health Science Center at San Antonio, San Antonio, TX

<sup>2</sup> South Texas Veterans Health Care System, San Antonio, Texas, and Department of Epidemiology and Biostatistics, University of Texas Health Science Center at San Antonio, San Antonio, TX

<sup>3</sup> Department of Family and Community Medicine, University of Texas Health Science Center at San Antonio, San Antonio, TX



**MHSRS-818    Poster Session: 2 - Poster # 123**

**Prevalence and Mental Health Correlates of Sleep Disruption Among Military Members Serving in a Combat Zone**

Marcus Taylor, PhD<sup>1</sup>, Susan Hilton, MS<sup>1</sup>, Justin Campbell, PhD<sup>2</sup>, Shiloh Beckerley, PhD<sup>1</sup>, Katharine Shobe, PhD<sup>3</sup>, Sean Drummond, PhD<sup>4</sup>

<sup>1</sup> Naval Health Research Center, San Diego, CA

<sup>2</sup> Space and Naval Warfare Systems, Pacific, San Diego, CA

<sup>3</sup> Office of Naval Research, Arlington, VA

<sup>4</sup> Veterans Affairs San Diego Healthcare System, CA

**MHSRS-841    Poster Session: 2 - Poster # 124**

**Individual and Unit-Level Analysis of Military Workplace Violence**

Pamela K Lattimore, PhD, James V Trudeau, PhD, Richard Van Dorn, PhD, Mike Anastario, PhD, Kelle Barrick, PhD, Joel K Cartwright, BA

RTI International

**MHSRS-1130    Poster Session: 2 - Poster # 125**

**Military Couples and Soldier Resilience**

Adrian Blow, PhD<sup>1</sup>, Angela Huebner, PhD<sup>2</sup>, Mara Hirschfeld, MS<sup>2</sup>, Lisa Gorman, PhD<sup>3</sup>, Danielle Guty<sup>3</sup>, Michelle Kees, PhD<sup>4</sup>

<sup>1</sup> Michigan State University

<sup>2</sup> Virginia Tech

<sup>3</sup> Michigan Public Health Institute

<sup>4</sup> University of Michigan

## **PSYCHOLOGICAL HEALTH AND REHABILITATION AND RECOVERY – SENSORY ISSUES/VISION, HEARING & BALANCE**

**MHSRS-281    Poster Session: 2 - Poster # 127**

**Development of an in vitro model of proliferative vitreoretinopathy using retinal pigment epithelium derived from induced pluripotent stem cells**

Whitney Greene, PhD<sup>1,2</sup>, Alberto Muniz PhD<sup>1,2</sup>, COL Anthony Johnson MD<sup>2</sup>, Heuy-Ching Wang PhD<sup>2</sup>

<sup>1</sup> National Research Council

<sup>2</sup> Ocular Trauma, U.S. Army Institute of Surgical Research

**MHSRS-388    Poster Session: 2 - Poster # 128**

**Visual Outcomes of 654 Casualties with Eye Injuries at Walter Reed Army Medical Center between 2001-2011**

Marcus Colyer, MD<sup>1,2</sup>, Patrick Barker, MD<sup>1</sup>

<sup>1</sup> Walter Reed National Medical Center

<sup>2</sup> Uniformed Services University of the Health Sciences

**MHSRS-417    Poster Session: 2 - Poster # 129**

**Acute Effects Of A 6-Hour Dive On Vestibular Components Of Postural Control**

Stephen M. Glass<sup>1</sup>, Matthew W. Wittstein<sup>1</sup>, Christopher K. Rhea<sup>1</sup>, Scott E. Ross<sup>1</sup>, F. Jay Haran<sup>2</sup>, Barbara E. Shykoff<sup>2</sup>, John P. Florian<sup>2</sup>

<sup>1</sup> University of North Carolina at Greensboro, Greensboro, NC

<sup>2</sup> Navy Experimental Diving Unit, Panama City, FL



**MHSRS-440 Poster Session: 2 - Poster # 130**

**A Comprehensive Blast-Related Auditory Injury Database (BRAID) of Combat-Injured US Military Personnel**

Antony R. Joseph, AuD PhD<sup>1</sup>, Jaime L. Horton, MPH<sup>2</sup>, Mary C. Clouser, PhD<sup>2</sup>, Andrew J. MacGregor, PhD<sup>2</sup>, Michelle L. Louie<sup>2</sup>, and Michael R. Galarneau, MS NREMT<sup>2</sup>

<sup>1</sup> Navy Environmental and Preventive Medicine Unit Five, San Diego, CA

<sup>2</sup> Naval Health Research Center, San Diego, CA

**MHSRS-501 Poster Session: 2 - Poster # 131**

**Magnetic Nanoparticle Based Approach for Externally Controlled Corneal Endothelial Repair**

Lauren Cornell<sup>1</sup>, Mauris Desilva<sup>2</sup>, Hetty Wang<sup>1</sup>, Anthony Johnson<sup>1</sup>, David Zamora<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

<sup>2</sup> Naval Medicine Research Unit San Antonio, San Antonio, TX

**MHSRS-590 Poster Session: 2 - Poster # 132**

**Cellulose Hydrogel Contact Lenses for Use as a Corneal Bandage**

M. Patchan<sup>1</sup>, J. Chae<sup>2</sup>, J.D. Lee<sup>3</sup>, J.P. Maranchi<sup>1</sup>, R. McCally<sup>1,4</sup>, O. Schein<sup>4</sup>, J.H. Elisseeff<sup>2</sup>, M.M. Trexler<sup>1</sup>

<sup>1</sup> Research and Exploratory Development Department, Johns Hopkins University Applied Physics Laboratory (JHU/APL), Laurel, Maryland

<sup>2</sup> Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD

<sup>3</sup> Department of Earth and Planetary Sciences, Johns Hopkins University, Baltimore, MD

<sup>4</sup> Wilmer Eye Institute, Johns Hopkins Medical Institutions, Baltimore, MD

**MHSRS-758 Poster Session: 2 - Poster # 133**

**The Horus Eye Restoration Project**

Patricia A. Reilly, PhD, J.B. Phillips, PhD, Jonathan Miller, PhD, Tony Gover, PhD, Robert C. Read, Ronald Marchessault, John F. Glenn, PhD, Kenneth A. Bertram, MD, PhD

U.S. Army Medical Research & Materiel Command, Fort Detrick, MD 21702

**MHSRS-829 Poster Session: 2 - Poster # 134**

**Stem Cell-Derived Inner Ear Organoids for High-Content Drug Screening**

Karl Koehler, PhD<sup>1</sup>, Xiao-Ping Liu, PhD<sup>2</sup>, Andrew Mikosz, BA<sup>1</sup>, Jeffrey Holt, PhD<sup>2</sup>, Eri Hashino, PhD<sup>1</sup>

<sup>1</sup> Indiana University School of Medicine

<sup>2</sup> Harvard Medical School

**MHSRS-1138 Poster Session: 2 - Poster # 135**

**Eye Injuries in Theatre: Review of a Large Case Series**

Stephen R. O'Connell, MD (CAPT, MC, USN)<sup>1</sup>, R. Joel Welch, MD<sup>2</sup>, Quan D. Nguyen, MD<sup>2</sup>

<sup>1</sup> Department of Ophthalmology, Naval Hospital Camp Pendleton, Camp Pendleton, California, USA

<sup>2</sup> Truhlsen Eye Institute, University of Nebraska Medical Center, Omaha, Nebraska, USA



## PSYCHOLOGICAL HEALTH AND REHABILITATION AND RECOVERY - SUICIDE

### MHSRS-702 Poster Session: 2 - Poster # 136

#### Prevalence and predictors of suicidal ideation in a sample of treatment seeking Veterans with Post-Traumatic Stress Disorder

Mayra Gomez BA<sup>1</sup>, Pia Heppner PhD<sup>1</sup>, Maxwell Rainforth PhD<sup>3</sup>, John Salerno PhD<sup>3</sup>, Paul Mills PhD<sup>2</sup>, Robert Schneider MD<sup>3</sup>, Carolyn Gaylord-King PhD<sup>3</sup>, Sandorf Nidich EdD<sup>3</sup>, Thomas Rutledge PhD<sup>1,2</sup>

<sup>1</sup> Veteran Affairs- VHASDC

<sup>2</sup> University of California, San Diego

<sup>3</sup> Maharishi Institute of Management Research

### MHSRS-811 Poster Session: 2 - Poster # 137

#### Risk of Suicide Following OEF/OIF Deployment and Separation from the Military

Mark A. Reger, PhD<sup>1</sup>, Derek J. Smolenski, MPH, PhD<sup>1</sup>, Nancy A. Skopp, PhD<sup>1</sup>, Melinda J. Metzger-Abamukang, BS<sup>1</sup>, Han K. Kang, Dr.PH<sup>2</sup>, Tim A. Bullman, MA<sup>3</sup>, Sondra Perdue, Dr.PH<sup>4</sup>, Gregory G. Gahm, PhD<sup>1</sup>

<sup>1</sup> National Center for Telehealth and Technology (T2), Joint Base Lewis McChord, Tacoma, Washington

<sup>2</sup> Institute for Clinical Research, Washington DC VA Medical Center, Department of Veterans Affairs

<sup>3</sup> Department of Veterans Affairs (VA) Office of Public Health Post-Deployment Health Strategic Healthcare Group, Washington, DC

<sup>4</sup> University of Washington-Tacoma, WA

### MHSRS-1161 Poster Session: 2 - Poster # 138

#### Longitudinal evaluation using the recently developed Defense Automated Neurobehavioral Assessment (DANA) tool of the cognitive impact of Electroconvulsive Therapy (ECT) in the treatment of Major Depressive Disorder (MDD)

Steven Woods, MD MEd<sup>1</sup>, Ryoko Susukida, PhD<sup>3</sup>, Alison Riehm, BS<sup>1</sup>, Henry Askew<sup>1</sup>, Kristen Rahn, PhD<sup>1,2</sup>, Corinna Lathan, PhD<sup>4</sup>, Adam Kaplin, MD PhD<sup>1,2</sup>

<sup>1</sup> Department of Psychiatry, Johns Hopkins University School of Medicine, Baltimore, MD, USA

<sup>2</sup> Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD, USA

<sup>3</sup> Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

<sup>4</sup> AnthroTronix, Silver Spring, MD, USA

## TRAUMA CARE - BLOOD/BLOOD PRODUCTS

### MHSRS-128 Poster Session: 2 - Poster # 140

#### Effect of Perfluorocarbon on Platelet Number and Function after Intravenous Infusion in Sheep

Jiepei Zhu, PhD<sup>1</sup>, J. Travis Parsons, PhD<sup>2</sup>, Jacquelyn R. McCarter, BS<sup>2</sup>, Christopher R. Sweeney, BS<sup>1</sup>, Jackson M. Hylton, BS<sup>1</sup>, Erika J Martin, MS<sup>3</sup>, Donald Brophy, Pharm D, and Bruce D. Spiess, MD<sup>1</sup>

<sup>1</sup> Department of Anesthesiology

<sup>2</sup> Department of Neurosurgery

<sup>3</sup> Department of Pharmacotherapy & Outcomes Science

### MHSRS-201 Poster Session: 2 - Poster # 141

#### Large Animal Evaluation Of The Safety And Efficacy Of The Mirasol® System For Fresh Whole Blood Transfusion In A Diffuse, Non-Surgical Bleeding Model

Obi T. Okoye, MD<sup>1</sup>, Heather Reddy, PhD<sup>2</sup>, Monica D. Wong, MS<sup>1</sup>, Suzann Doane, BS<sup>2</sup>, Shelby Resnick, MD<sup>1</sup>, Efsthios Karamanos, MD<sup>1</sup>, Dimitra Skiada, MD<sup>1</sup>, Raymond Goodrich, PhD<sup>2</sup>, Kenji Inaba, MD<sup>1</sup>

<sup>1</sup> Division of Trauma Surgery and Surgical Critical Care, Department of Surgery, Keck School of Medicine at the University of Southern California, Los Angeles, CA

<sup>2</sup> Terumo BCT Biotechnologies, LLC, Lakewood, CO



**MHSRS-263    Poster Session: 2 - Poster # 142**

**Robustness Testing of White Blood Cell Inactivation with the Mirasol System for Whole Blood**

Susan Yonemura, PhD; Susanne Marschner, PhD; Raymond Goodrich, PhD  
Terumo BCT Biotechnologies, Lakewood, CO, USA

**MHSRS-294    Poster Session: 2 - Poster # 143**

**Recursive Partitioning Identifies Greater Than 4 Units of PRBC's Per Hour as an Improved Massive Transfusion Definition**

Dr. Alexis Moren

**MHSRS-306    Poster Session: 2 - Poster # 144**

**Transfusion Of Human Platelets Treated With Mirasol Pathogen Reduction Technology Does Not Induce Acute Lung Injury in Mice**

Axelle Caudrillier, PhD<sup>1</sup>, Benat Mallavia, PhD<sup>1</sup>, Lindsay Rouse, BA<sup>2</sup>, Susanne Marschner, PhD<sup>2</sup>,  
Raymond P. Goodrich, PhD<sup>2</sup>, Mark R. Looney, MD<sup>1</sup>

<sup>1</sup> Department of Medicine, University of California, San Francisco, San Francisco, CA, USA

<sup>2</sup> Terumo BCT, Inc., Lakewood, CO, USA

**MHSRS-324    Poster Session: 2 - Poster # 145**

**Clearly Defining Pediatric Massive Transfusion: Cutting Through the Fog And Friction With Combat Data**

Jeremy W. Cannon<sup>1,2</sup>, Lucas P. Neff<sup>3</sup>, Jonathan J. Morrison<sup>4</sup>, Mary J. Edwards<sup>2</sup>, Philip C. Spinella<sup>5</sup>,  
Matthew A. Borgman<sup>6</sup>

<sup>1</sup> Department of Surgery, San Antonio Military Medical Center, Fort Sam Houston, TX

<sup>2</sup> Department of Surgery, Uniformed Services University of the Health Sciences, Bethesda, MD

<sup>3</sup> Department of Surgery, David Grant Medical Center, Travis Air Force Base, CA

<sup>4</sup> The Academic Department of Military Surgery and Trauma, Royal Centre for Defence Medicine, Birmingham, United Kingdom

<sup>5</sup> Department of Pediatrics, Washington University School of Medicine, St. Louis, Missouri

<sup>6</sup> Department of Pediatrics, San Antonio Military Medical Center, Fort Sam Houston, TX

**MHSRS-781    Poster Session: 2 - Poster # 146**

**The Response of Refrigerated Platelets to Physiologic Inhibitors**

Kristin Reddoch, BS<sup>1</sup>, Armando Rodriguez, BS<sup>2</sup>, Robbie Montgomery<sup>2</sup>, Heather Pidcoke, MD, PhD<sup>2</sup>,  
Anand Ramasubramanian, PhD<sup>1</sup>, and Andre Cap, MD, PhD<sup>2</sup>

<sup>1</sup> The University of Texas at San Antonio, San Antonio, TX

<sup>2</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-782    Poster Session: 2 - Poster # 147**

**The evaluation of apoptosis-related events in refrigerated platelets for transfusion**

Kristin Reddoch, BS<sup>1</sup>, Robbie Montgomery, MS<sup>2</sup>, Heather Pidcoke, MD, PhD<sup>2</sup>, Anand Ramasubramanian, PhD<sup>1</sup>,  
Andrew Cap, MD, PhD<sup>2</sup>

<sup>1</sup> The University of Texas at San Antonio, San Antonio, TX

<sup>2</sup> U.S. Army Institute of Surgical Research, San Antonio, TX



**MHSRS-864    Poster Session: 2 - Poster # 148**

**Human Amnion-derived Multi-potent Progenitor Cells Improve Survival and Clinical Features in a Murine Model of Acute Graft Versus Host Disease**

Dr. Anthony Foster<sup>1</sup>, Yelena Lazdun<sup>1</sup>, Eric A. Elster, MD<sup>2</sup>, Thomas A Davis, PhD<sup>1</sup>

<sup>1</sup> Navy Medical Research Center

<sup>2</sup> Department of Surgery, USUHS

**MHSRS-874    Poster Session: 2 - Poster # 149**

**Computational Modeling of Thrombin Generation in Trauma**

Mitchell Jay Cohen MD<sup>1</sup>, Benjamin M. Howard MD MPH<sup>1</sup>, Lucy Z. Kornblith MD<sup>1</sup>, Brittney J. Redick BA<sup>1</sup>, Kenneth Mann PhD<sup>2</sup>, Thomas Orfeo PhD<sup>2</sup>, Ryan F. Vilardi MS<sup>1</sup>, Mary F. Nelson RN MPA<sup>1</sup>, Kathleen Brummel-Ziedins PhD<sup>2</sup>

<sup>1</sup> Department of Surgery; University of California, San Francisco; San Francisco General Hospital

<sup>2</sup> Department of Biochemistry, University of Vermont

**MHSRS-882    Poster Session: 2 - Poster # 150**

**Selectively Activated Platelets in Wound Healing Applications**

Dr. Bridget Ford

**MHSRS-927    Poster Session: 2 - Poster # 151**

**Coagulation Function After Cold (4°C) Storage Of Whole Rat Blood**

Jacob Chen, Xiaowu Wu, Jeffery Keese, Daniel Darlington, Andrew Cap  
U.S. Army Institute of Surgical Research, Fort Sam Houston, TX 78234

**MHSRS-934    Poster Session: 2 - Poster # 152**

**Polytrauma And Hemorrhage Elevates Protein C In Rats**

Xiaowu Wu, Andrew Cap, Daniel Darlington

U.S. Army Institute of Surgical Research, Fort Sam Houston, TX 78234

**MHSRS-939    Poster Session: 2 - Poster # 153**

**Platelet Function After Cold (4°C) Storage Of Whole Rat Blood**

Jacob Chen, Xiaowu Wu, Jeffery Keese, Daniel Darlington, Andrew Cap  
U.S. Army Institute of Surgical Research, Fort Sam Houston, TX 78234

**MHSRS-949    Poster Session: 2 - Poster # 154**

**Polytrauma And Hemorrhage Elevates Plasmin And Thrombin Activity In Rats**

Xiaowu Wu, Jacob Chen, Daniel Darlington, Andrew Cap

U.S. Army Institute of Surgical Research, Fort Sam Houston, TX 78234

**MHSRS-1041    Poster Session: 2 - Poster # 155**

**Treating non-compressible hemorrhage with functionalized nanoparticles**

Damien Kudela<sup>1</sup>, Stephanie A. Smith<sup>2</sup>, Ju Hun Yeon<sup>3</sup>, Anna May-Masnou<sup>1,4</sup>, Gary B. Braun<sup>1,5</sup>, Alessia Pallaoro<sup>1</sup>, Tracy Chuong<sup>1</sup>, James R. Baylis<sup>3</sup>, Christian J. Kastrup<sup>3</sup>, James H. Morrissey<sup>2</sup>, Galen D. Stucky<sup>1</sup>

<sup>1</sup> Department of Chemistry and Biochemistry, University of California, Santa Barbara

<sup>2</sup> Department of Biochemistry, University of Illinois at Urbana-Champaign

<sup>3</sup> Department of Biochemistry and Molecular Biology, University of British Columbia

<sup>4</sup> Departament d'Enginyeria Química, Universitat de Barcelona

<sup>5</sup> Sandford-Burnham Medical Research





**MHSRS-1135 Poster Session: 2 - Poster # 156**

**Clinical Outcomes in 9/11 Frozen Blood**

Nicole Gordon, MD, Martin Schreiber, MD

Oregon Health & Science University, Department of Surgery

**MHSRS-1136 Poster Session: 2 - Poster # 157**

**Cryo-printing for Ectoine-Assisted Preservation of Red Blood Cells**

Rami El Assal<sup>1,2</sup>, Sinan Guven<sup>1,2</sup>, Umut Atakan Gurkan<sup>2,3</sup>, Irep Gozen<sup>2</sup>, Hadi Shafiee<sup>2</sup>, Sedef Dalbeyber<sup>2</sup>, Noor Abdalla<sup>2</sup>, Gawain Thomas<sup>4</sup>, Wendy Fuld<sup>5</sup>, Ben M.W. Illigens<sup>6</sup>, Jessica Estanislau<sup>7</sup>, Joseph Khoory<sup>7</sup>, Richard Kaufman<sup>8</sup>, Claudia Zylberberg<sup>9</sup>, Neal Lindeman<sup>5</sup>, Qi Wen<sup>4</sup>, Ionita Ghiran<sup>7</sup>, Utkan Demirci<sup>1,2</sup>

<sup>1</sup> Bio-Acoustic-MEMS in Medicine (BAMM) Laboratory Canary Center at Stanford for Cancer Early Detection  
Department of Radiology, Stanford University School of Medicine, Palo Alto, CA 94304, USA

<sup>2</sup> Bio-Acoustic-MEMS in Medicine (BAMM) Laboratory Division for Biomedical Engineering Division of Infectious Diseases, Renal Division Department of Medicine, Brigham and Women's Hospital Harvard Medical School, Cambridge, MA 02139, USA

<sup>3</sup> Case Western Reserve University, Biomanufacturing and Microfabrication Laboratory Mechanical and Aerospace Engineering Department Department of Orthopedics, Advanced Platform Technology Center, Louis Stokes Cleveland Veterans Affairs Medical Center Cleveland, OH 44106, USA

<sup>4</sup> Department of Physics Worcester Polytechnic Institute Worcester, MA 01609, USA

<sup>5</sup> Department of Pathology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA 02115, USA

<sup>6</sup> Department of Neurology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA 02215, USA

<sup>7</sup> Division of Infectious Disease and Allergy-Inflammation Department of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA 02115, USA

<sup>8</sup> Brigham and Women's Hospital Blood Bank, Division of Adult Transfusion Medicine, Department of Pathology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA 02115, USA

<sup>9</sup> Akron Biotechnology, LLC, Boca Raton, FL 33487, USA

**MHSRS-1162 Poster Session: 2 - Poster # 158**

**ECLS DEVICE SHEAR STRESSES INDUCE PROTHROMBOTIC MICROPARTICLE FORMATION**

Andrew D.J. Meyer MD, MS<sup>1</sup>, Robin Kamucheka<sup>1</sup>, Prajeeda Nair<sup>2</sup>, Kristin M. Reddoch MS<sup>(2,3)</sup>, Robbie K. Montgomery MS<sup>3</sup>, Bijaya K. Parida PhD<sup>3</sup>, Andrew P. Cap MD, PhD<sup>3</sup>, Nigel Mackman PhD<sup>4</sup>, Anand K. Ramasubramanian, PhD<sup>2</sup>

<sup>1</sup> The University of Texas Health Science Center, San Antonio, TX

<sup>2</sup> The University of Texas at San Antonio, San Antonio, TX

<sup>3</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

<sup>4</sup> University of North Carolina at Chapel Hill

## **TRAUMA CARE - BURN AND INTENSIVE CARE**

**MHSRS-788 Poster Session: 2 - Poster # 59**

**Fenretinide prevents spinal trauma induced lipid distortion and improves recovery from spinal cord injury**

Danuta Radzioch, PhD<sup>1</sup>, Juan De Sanctis, PhD<sup>2</sup>, Gabriella Wojewodka, PhD<sup>1</sup>, Laura Curran<sup>1</sup>, Stéphane Parent, PhD, MD<sup>3</sup>, Mohan Radhakrishna, MD<sup>1</sup>, Jean Ouellet, MD<sup>1</sup>, Ioli Makriyianni, MSc<sup>1</sup>, Samuel David, PhD<sup>1</sup>

<sup>1</sup> McGill University Health Centre, Montreal, Canada

<sup>2</sup> Central University of Venezuela, Dept. of Immunology, Caracas, Venezuela<sup>3</sup> Sacré Coeur Hospital, Montreal, Canada



**MHSRS-193    Poster Session: 2 - Poster # 159**

**Blood pressure and heart rate can reliably estimate cardiac output in a conscious sheep model using computer machine learning approaches**

Nehemiah T. Liu MS<sup>1</sup>, George C. Kramer PhD<sup>2</sup>, Muzna N. Khan MS RRT<sup>2</sup>, Michael P. Kinsky MD<sup>2</sup>, José Salinas PhD<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> Resuscitation Research Laboratory, Department of Anesthesiology, University of Texas Medical Branch, Galveston, TX

**MHSRS-286    Poster Session: 2 - Poster # 160**

**Card Sorts Help “Unpack” Clinician Perspectives on Patient Condition and Treatment Priorities**

Jeremy Pamplin, MD<sup>1</sup>, Sarah Murray, MSN<sup>1</sup>, Kevin Chung, MD<sup>1</sup>, Todd Huzar, MD<sup>2</sup>, Steven Wolfe, MD<sup>3</sup>, Elizabeth Mann-Salinas, PhD<sup>1</sup>, Christopher Nemeth, PhD<sup>4</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, San Antonio, TX

<sup>2</sup> University of Texas Health Science Center, Memorial Herman Hospital, Houston, TX

<sup>3</sup> University of Texas Southwestern Medical Center, Dallas, TX

<sup>4</sup> Applied Research Associates, Chicago

**MHSRS-298    Poster Session: 2 - Poster # 161**

**Effects of recirculation of dialysate on carbon dioxide removal capabilities of a membrane lung**

Andriy I. Batchinsky MD<sup>1</sup>, Vittorio Scaravilli MD<sup>2</sup>, Stefan Kreyer MD<sup>3</sup>, Katharina Linden MD<sup>3</sup>,

Bryan Jordan, MS, RN<sup>1</sup>, Antonio Pesenti MD<sup>2</sup>, Leopoldo C. Cancio MD<sup>1</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> University of Milan-Bicoca, Milan, Italy

<sup>3</sup> University of Bonn, Germany

**MHSRS-313    Poster Session: 2 - Poster # 162**

**Surgeon General’s Casualty Nutrition Study (UK): Urinary Nitrogen Excretion and Change in Muscle Thickness of Injured UK service personnel**

Conor Bentley<sup>1</sup>, Lt. Col Mark Foster<sup>1,2</sup>, Surg. Capt. Markwinter<sup>1,2</sup>

<sup>1</sup> National Institute of Health Research Surgical Reconstruction and Microbiological Research Centre, Birmingham, UK

<sup>2</sup> Royal Centre of Defence Medicine, Birmingham, UK

**MHSRS-371    Poster Session: 2 - Poster # 163**

**Immunopathological Response to Severe Trauma and Burn: Changes in Platelet Activity in Acutely Burned Patients**

Rachel S. Morris, MD<sup>2</sup>, Beverly S. Schaffer, PhD<sup>1</sup>, John B. Lundy, MD<sup>1</sup>, Heather F. Pidcoke, MD, PhD<sup>1</sup>, Andrew P. Cap MD, PhD<sup>1,2</sup>, Martin G. Schwacha, PhD<sup>1,2</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research

<sup>2</sup> Department of Surgery, The University of Texas Health Science Center at San Antonio, San Antonio, TX

**MHSRS-378    Poster Session: 2 - Poster # 164**

**10 Year Comparison of Military Outcomes to the National Burn Repository (NBR)**

Bonnie Jackson, MSN RN, Booker King, MD, John Jones, BS, Sandra Escolas PhD, Michael Shiels, BS RN, Evan Renz, MD, Kevin Chung, MD, Leopoldo Cancio, MD

U.S. Army Institute of Surgical Research, Fort Sam Houston, San Antonio, TX



**MHSRS-398 Poster Session: 2 - Poster # 165**

**An Electronic Wound Mapping System**

Craig Fenrich, BS, Sarah Shingleton, MS, RN, CCRN, CCNS, Maria Serio-Melvin, MSN, Jose Salinas PhD  
U.S. Army Institute of Surgical Research, Fort Sam Houston, San Antonio, TX

**MHSRS-447 Poster Session: 2 - Poster # 166**

**Bridging the Gap: Hybrid Cardiac Echo in the Critically Ill**

Jacob Glaser, MD, Thomas Scalea, MD, Sarah Murthi, MD  
University of Maryland R Adams Cowley Shock Trauma Center, Baltimore, MD

**MHSRS-508 Poster Session: 2 - Poster # 167**

**Closed-loop FiO2 smart oxygenation system to detect pulmonary injury**

Nehemiah T. Liu MS<sup>1</sup>, Richard D Branson MS RRT<sup>2</sup>, P Enkheebetaar MD<sup>3</sup>, N Patel MD<sup>3</sup>, Michael G. Salter RRT<sup>3</sup>,  
George C. Kramer PhD<sup>3</sup>, José Salinas PhD<sup>1</sup>, Michael P. Kinsky MD<sup>3</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> Critical Care Research, Department of Surgery, University of Cincinnati, Cincinnati, OH

<sup>3</sup> Resuscitation Research Laboratory, Department of Anesthesiology, University of Texas Medical Branch,  
Galveston, TX

**MHSRS-569 Poster Session: 2 - Poster # 168**

**Admission Thromboelastography Does Not Predict Venous Thromboembolic Events In U.S. Combat Casualties**

Lt Col Gerald Fortuna

**MHSRS-688 Poster Session: 2 - Poster # 169**

**Developing Cognitive Aides according to the Phases of Illness Paradigm for use in the Burn ICU**

Sarah J. Murray, MSN<sup>1</sup>, Jeremy Pamplin, MD<sup>2</sup>, Kevin Chung, MD, FCCM<sup>2</sup>, Elizabeth Mann-Salinas, PhD<sup>2</sup>,  
Maria Serio-Melvin, MSN<sup>2</sup>, Todd Huzar, MD<sup>3</sup>, Steven Wolf, MD<sup>4</sup>, Christopher Nemeth, PhD<sup>5</sup>

<sup>1</sup> The Geneva Foundation;

<sup>2</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>3</sup> Memorial Hermann Hospital Texas Medical Center, Houston, TX

<sup>4</sup> Parkland Health and Hospital System, Dallas, TX

<sup>5</sup> Applied Research Associates, Inc., San Antonio, TX

**MHSRS-691 Poster Session: 2 - Poster # 170**

**Isolation of Volatile Organic Compounds as Noninvasive Early Markers of Pulmonary Oxygen Toxicity**

William Cronin, Angela Senese, Michael Bodo, David Regis, Richard Mahon, Aaron Hall  
Undersea Medicine Department, Naval Medical Research Center

**MHSRS-902 Poster Session: 2 - Poster # 171**

**TISSUE DAMAGE VOLUME SCORE: A NOVEL INDEX THAT PREDICTS SYSTEMIC INFLAMMATION  
AND ORGAN DYSFUNCTION IN MULTIPLY INJURED PATIENTS**

Travis Frantz MS<sup>1</sup>, Scott Steenburg MD<sup>2</sup>, Greg Gaski MD<sup>2</sup>, R. Lawrence Reed MD<sup>2</sup>,  
Timothy Pohlman MD<sup>2</sup>, Tyler McCarroll MS<sup>1,2</sup>

<sup>1</sup> Indiana University School of Medicine

<sup>2</sup> Indiana University Health Methodist



**MHSRS-1030 Poster Session: 2 - Poster # 172**

**Deployment of a Mobile Decision Support System in a Burn ICU: A Case Series**

Ms. Maria Serio-Melvin

**MHSRS-1095 Poster Session: 2 - Poster # 173**

**Decision Support for TEG Analysis**

Saul Vega, BS<sup>1</sup>, Nicolas Prat, MD<sup>1,2</sup>, Jose Salinas, PhD<sup>1</sup>, Michael Dubick, PhD<sup>1</sup>, Andrew Cap, MD<sup>1</sup>, Lorne Blackbourne, MD<sup>1,3</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, Fort Sam Houston, TX

<sup>2</sup> French Armed Forces Biomedical Research Institute

<sup>3</sup> Brooke Army Medical Center, Fort Sam Houston, TX

**MHSRS-1120 Poster Session: 2 - Poster # 174**

**Non-contact Assessment of Wound Severity and Extent with Modulated Imaging**

Amaan Mazhar, PhD<sup>1</sup>, Steve Saggese, PhD<sup>1</sup>, Alonda Pollins<sup>2</sup>, Nancy Cardwell<sup>2</sup>, Lillian Nanney, PhD<sup>2</sup>, David J. Cuccia, PhD<sup>1</sup>

<sup>1</sup> Modulated Imaging Inc. Photonic Incubator Office; Beckman Laser Institute; 1002 Health Sciences Road. Irvine, CA 92617

<sup>2</sup> Department of Plastic Surgery; Vanderbilt University. Nashville, TN 37232

**MHSRS-1173 Poster Session: 2 - Poster # 175**

**Tissue Engineering for a 3D World: Incorporating Topographic Cues into Skin Substitutes**

Amanda L. Clement, George D. Pins, PhD

Worcester Polytechnic Institute, Department of Biomedical

## **TRAUMA CARE - CRANIOFACIAL TRAUMA AND FACE REGENERATIVE RESEARCH**

**MHSRS-194 Poster Session: 2 - Poster # 176**

**Segmental Mandibular Defects in Sinclair Miniature Pigs Mimic Human Mandibular Reconstruction Cases**

Patricia Carlisle PhD<sup>1</sup>, Douglas Owens DVM<sup>1</sup>, David Tucker DDS<sup>1</sup>, Robert Hale, DDS<sup>1</sup>, Pamela Brown Baer MEd, DDS<sup>1</sup>

<sup>1</sup> U.S Army Institute of Surgical Research, Fort Sam Houston, TX

**MHSRS-283 Poster Session: 2 - Poster # 177**

**The Severity of Dental-Disease Non-battle Injuries in Deployed US Army Personnel – May 2009-December 2012**

John Simecek<sup>1</sup>, Barbara Wojcik<sup>2</sup>, Rebecca Humphrey<sup>2</sup>, Alica Guerrero<sup>2</sup>, Adam Fedorowicz<sup>2</sup>, Wioletta Szeszel-Fedorowicz<sup>2</sup>, Paul Colthirst<sup>3</sup>, Philip DeNicolò<sup>4</sup>

<sup>1</sup> Naval Medical Research Unit San Antonio, San Antonio, TX

<sup>2</sup> Center for AMEDD Strategic Studies

<sup>3</sup> Tri-Service Center for Oral Health Studies

<sup>4</sup> U.S. Army Dental and Trauma Research Detachment

**MHSRS-334 Poster Session: 2 - Poster # 178**

**Three-dimensional (3-D) Integrated Organ Printing for Ear Reconstruction**

Sang Jin Lee, PhD, Hyun-Wook Kang, PhD, James J. Yoo, MD, PhD, Anthony Atala, MD  
Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine



**MHSRS-414    Poster Session: 2 - Poster # 179**

**The Future of Auricular Repair: Using Electromechanical Reshaping to Develop a Minimally Invasive Technique to Rebuild a Human Ear**

Jessica R. Gandy <sup>1,2</sup>, Cyrus Manuel<sup>2</sup>, Tony D. Nguyen<sup>2</sup>, Allen Foulad, MD<sup>2,3</sup>, Jason Chen<sup>2</sup>, Natalia Molinatti<sup>2</sup>, Brian J. Wong, MD, PhD <sup>1,2,3</sup>

<sup>1</sup> School of Medicine, University of California-Irvine, 1001 Health Sciences Road, Irvine, CA 92612

<sup>2</sup> Beckman Laser Institute and Medical Clinic, University of California Irvine, 1002 Health Sciences Road East, Irvine, CA 92612

<sup>3</sup> Department of Otolaryngology, Head and Neck Surgery, University of California Irvine, 101 The City Drive, Orange, CA 92668

**MHSRS-512    Poster Session: 2 - Poster # 180**

**Characteristics of Maxillofacial Injuries and Safety of In-Theater Facial Fracture Repair in Severe Combat Trauma**

Matthew Keller, MD<sup>1</sup>, Peggy Han, MPH<sup>2</sup>, Michael Galarneau, MS, NREMT<sup>2</sup>, Gurtis Gaball, MD<sup>1</sup>

<sup>1</sup> Naval Medical Center, San Diego, CA

<sup>2</sup> Naval Health Research Center, San Diego, CA

**MHSRS-585    Poster Session: 2 - Poster # 181**

**Airway Recovery after Face Transplantation**

Sebastian Fischer, MD<sup>1</sup>, Joseph S Wallins, MD<sup>1</sup>, Ericka M Bueno, PhD<sup>1</sup>, Maximilian Kueckelhaus, MD<sup>1</sup>, J Rodrigo Diaz-Siso, MD<sup>1</sup>, Donald Annino, MD<sup>2</sup>, Edward J Caterson, MD, PhD<sup>1</sup>, Bohdan Pomahac, MD<sup>1</sup>

<sup>1</sup> Department of Surgery, Division of Plastic Surgery, Brigham and Women's Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA

<sup>2</sup> Department of Surgery, Division of Otolaryngology, Brigham and Women's Hospital, Harvard Medical School, 45 Francis St, 02115 Boston, MA

**MHSRS-684    Poster Session: 2 - Poster # 182**

**The impact of full thickness burn on skin graft contraction and skin quality**

Rodney K. Chan, MD, FACS.<sup>1,2</sup>, Lloyd F. Rose, PhD.<sup>1,2</sup>, David I. Tucker, DDS.<sup>1,2</sup>, Robert G. Hale, DDS<sup>1,2</sup>, Kai P. Leung, PhD<sup>1,2</sup>

<sup>1</sup> U.S. Army Institute of Surgical Research, 3650 Chambers Pass, JBSA Fort Sam Houston, TX 78234

<sup>2</sup> Dental and Trauma Research Detachment, US Army Institute of Surgical Research, 3650 Chambers Pass, JBSA Fort Sam Houston, TX 78234

**MHSRS-778    Poster Session: 2 - Poster # 183**

**Spatial and Temporal Control of Tissue Growth Using DNA Aptamers**

Vladimir Gilman<sup>1</sup>, Thieu Truong<sup>1</sup>, Minh Duong<sup>1</sup>, Gordon Hirschman<sup>1</sup>, Kelly Burke<sup>2</sup>, Bruce Panilaitis<sup>2</sup>, David Kaplan<sup>2</sup>

<sup>1</sup> Vivonics, Inc. Waltham MA

<sup>2</sup> Tufts University, Medford, MA

**MHSRS-803    Poster Session: 2 - Poster # 184**

**Characterization of the role of hypodermis on contraction and fibrosis**

Lloyd F Rose, PhD, Jesse C Wu, MS, David I Tucker, DDS, Rodney K Chan, MD

U.S. Army Institute of Surgical Research, Dental and Trauma Research Detachment, U.S. Army Institute of Surgical Research, 3650 Chambers Pass, JBSA Fort Sam Houston, TX 78234



**MHSRS-854 Poster Session: 2 - Poster # 185**

**Steroid free immunosuppression in vascularized composite allotransplantation**

J Rodrigo Diaz-Siso, MD<sup>1</sup>, Sebastian Fischer, MD<sup>1</sup>, Geoffroy Sisk, MD<sup>1</sup>, Ericka M Bueno, PhD<sup>1</sup>, Maximilian Kueckelhaus, MD<sup>1</sup>, Simon Talbot, MD<sup>1</sup>, Matthew J Carty, MD<sup>1</sup>, Nathaniel Treister, NS<sup>2</sup>, Francisco Marty, MD<sup>3</sup>, Bohdan Pomahac, MD<sup>1</sup> and Stefan Tullius, MD, PhD<sup>4</sup>

<sup>1</sup> Department of Surgery, Division of Plastic Surgery, Brigham and Women's Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA

<sup>2</sup> Department of Surgery, Division of Dentistry and Oral Surgery, Brigham and Women's Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA

<sup>3</sup> Department of Medicine, Division of Infectious Diseases, Brigham and Women's Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA

<sup>4</sup> Department of Surgery, Division of Transplant Surgery, Brigham and Women's Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA

**MHSRS-911 Poster Session: 2 - Poster # 186**

**Autologous Regeneration of Anatomically-Shaped, Vascularized Craniofacial Bone**

Dr. Warren Grayson

**MHSRS-154 Poster Session: 2 - Poster # 187**

**Effects of Silver Nanoparticles on the Growth and Attachment of Staphylococcus aureus and Methicillin-Resistant Staphylococcus aureus (MRSA)**

Tony T. Yuan, Amber M. Nagy, Natalie A. Forbes, Mauris N DeSilva  
Naval Medical Research Unit San Antonio, San Antonio, TX

## **TRAUMA CARE - ENROUTE CARE**

**MHSRS-1156 Poster Session: 2 - Poster # 139**

**Performance of Chemical Oxygen Generators at Altitude and Temperature Extremes**

Dario Rodriguez Jr, MS<sup>2</sup>, Thomas Blakeman, MS<sup>1</sup>, Tyler Britton<sup>2</sup>, Travis Gerlach, MD<sup>2</sup>, Richard Branson, MS<sup>1</sup>

<sup>1</sup> University of Cincinnati Department of Surgery

<sup>2</sup> United States Air Force, CSTARS Cincinnati

**MHSRS-186 Poster Session: 2 - Poster # 188**

**Air Force En Route Patient Safety: A Mixed-Methods Study**

Susan Connor, PhD, RN<sup>1</sup>, Margaret McNeill, PhD, RN<sup>2</sup>, Susan Dukes, Lt Col, USAF, NC, PhD, CCNS<sup>1</sup>  
Penny Pierce, PhD, RN<sup>3</sup>

<sup>1</sup> Department of Aerospace Medicine, USAF School of Aerospace Medicine

<sup>2</sup> Department of Professional & Clinical Development, Frederick Regional Health System

<sup>3</sup> Graduate School of Nursing PhD Program in Nursing Science, USUHS





**MHSRS-197 Poster Session: 2 - Poster # 189**

**Assessment of Pain: A Safety Consideration within Aeromedical Evacuation**

Elizabeth Bridges, Col, AFRC, NC, PhD<sup>1</sup>, Susan Dukes, Lt Col, USAF, NC, PhD, CCNS<sup>2</sup>, Genny Maupin, MPH<sup>2</sup>

<sup>1</sup> University of Washington

<sup>2</sup> 711th Human Performance Wing, USAFSAM/FH, Wright-Patterson AFB, Dayton, OH

**MHSRS-198 Poster Session: 2 - Poster # 190**

**Quantification of Ergonomic Risks Associated with Aeromedical Evacuation Tasks**

Brittany Fouts, MS<sup>1\*</sup>, Jennifer Serres, PhD<sup>2\*</sup>, Susan Dukes, Lt Col, USAF, NC, PhD, CCNS<sup>2</sup>, Genny Maupin, MHP<sup>2</sup>, Molly Wade, MS<sup>3</sup>, Mandy Cowgill, MS<sup>4</sup>

<sup>1</sup> Oak Ridge Institute for Science and Education, Wright-Patterson AFB, Dayton, OH

<sup>2</sup> 711th Human Performance Wing, USAFSAM/FH, Wright-Patterson AFB, Dayton, OH

<sup>3</sup> Peerless Technologies Corp., Wright-Patterson AFB, Dayton, OH

<sup>4</sup> Azimuth Corp., Wright-Patterson, AFB, Dayton, OH

\* Presenters

**MHSRS-525 Poster Session: 2 - Poster # 191**

**Evaluation of oxygen pulse dose timing during mechanical ventilation in a porcine model**

Dario Rodriguez Jr., MS<sup>1</sup> Richard Branson, MS<sup>2</sup> Thomas Blakeman, MS<sup>2</sup> Peter Jernigan, MD<sup>2</sup>

Jay Johannigman, MD<sup>2</sup>

<sup>1</sup> CSTARS Cincinnati/USAFSAM

<sup>2</sup> University of Cincinnati Department of Surgery

**MHSRS-558 Poster Session: 2 - Poster # 192**

**Prehospital and En Route Cricothyrotomy Performed in the Combat Setting: a Prospective, Multicenter, Observational Study**

Ed Barnard<sup>1,2</sup>, Alicia Ervin<sup>1</sup>, Robert Mabry<sup>3</sup>, Vikhyat Bebarta<sup>1,3</sup>

<sup>1</sup> Air Force En route Care Research Center, US Army Institute of Surgical Research/59th MDW

<sup>2</sup> Institute of Naval Medicine, Gosport, UK

<sup>3</sup> Joint Trauma System, Center of Excellence, U.S. Army Institute of Surgical Research, San Antonio, TX

**MHSRS-607 Poster Session: 2 - Poster # 193**

**A model to predict duration of ventilation and 30-day mortality in patients with traumatic injuries in a combat setting using pre-flight clinical parameters**

Ed Barnard<sup>1,2</sup>, Alejandra Mora<sup>1</sup>, Vikhyat Bebarta<sup>1</sup>

<sup>1</sup> Air Force En route Care Research Center, U.S. Army Institute of Surgical Research, San Antonio, TX

<sup>2</sup> Institute of Naval Medicine, Gosport, UK

**MHSRS-632 Poster Session: 2 - Poster # 194**

**Advanced en-route care: a case-control analysis of the Acute Lung Rescue Team**

Zonies, David, MD MPH<sup>1</sup>, Tuman, Caroline RN<sup>1</sup>, Fejdelem, Kendra, RN<sup>1</sup>, Elterman, Joel, MD<sup>1</sup>, Fang, Raymond, MD<sup>2</sup>

<sup>1</sup> Landstuhl Regional Medical Center

<sup>2</sup> C-STARS Baltimore



**MHSRS-657 Poster Session: 2 - Poster # 195**

**Hyperoxic versus Normoxic Resuscitation in a Rat Polytrauma Model of TBI plus Hemorrhagic Shock**

Dominique Scutella<sup>1</sup>, Yan Pan<sup>1</sup>, Julie Proctor<sup>1</sup>, Gary Fiskum<sup>1</sup>

<sup>1</sup> University of Maryland, School of Medicine

**MHSRS-875 Poster Session: 2 - Poster # 196**

**Blood administration during Critical Care Air Transport Team (CCATT) evacuation out of theater is associated with adverse hemodynamic events regardless of pre-flight hemoglobin levels**

Vikhyat Bebart, Lt Col, MC<sup>1,2</sup>, Alejandra Mora, BS<sup>1</sup>, Alicia Ervin, RN BSN<sup>1</sup>, Victoria Ganem, RN BSN<sup>1</sup>, Nina Nnamani, MS<sup>1</sup>, Toni Vargas, PA-C<sup>1</sup>

<sup>1</sup> Air Force En Route Care Research Center

<sup>2</sup> San Antonio Military Medical Center, San Antonio, TX

**MHSRS-945 Poster Session: 2 - Poster # 197**

**En Route Blood Transfusion from Point of Injury in a Theater of Operations Positively Impacts Shock Index**

Kirby Gross, COL, MC, USA<sup>1</sup>, Stacy Shackelford, Col, USAF<sup>2</sup>, Nicole Powell-Dunford, LTC, MC, USA<sup>3</sup>, Jean Orman, ScD, MPH<sup>4</sup>, Jeffrey Howard, PhD<sup>4</sup>, Jose Quesada, LTC, USA<sup>5</sup>, Jeff Bailey, Col, MC, USAF<sup>1</sup>

<sup>1</sup> Joint Trauma System, U.S. Army Institute of Surgical Research, Joint Base San Antonio, San Antonio, TX

<sup>2</sup> U.S. Air Force Center for Sustainment of Trauma and Readiness Skills, Baltimore MD

<sup>3</sup> 25th Combat Aviation Brigade, Wheeler Army Air Field, Schofield Barracks HI

<sup>4</sup> US Army Institute of Surgical Research, Joint Base San Antonio, San Antonio, TX

<sup>5</sup> 440th Blood Support Detachment, Joint Base San Antonio, San Antonio, TX

**MHSRS-984 Poster Session: 2 - Poster # 198**

**Characterization of Patient Immobilization and Vibration Mitigation Systems during Simulated Transport**

Rachel Kinsler, MS<sup>1,2</sup>, Amy Eslinger<sup>3</sup>, Khalid Barazani, PhD<sup>1</sup>

<sup>1</sup> U.S. Army Aeromedical Research Laboratory

<sup>2</sup> The Geneva Foundation

<sup>3</sup> North Tide Group, LLC

**MHSRS-1031 Poster Session: 2 - Poster # 199**

**Automated Critical Care System: Evaluation of Fluid Resuscitation Algorithms in an Animal Model of Enroute Care**

Muzna Khan MS, RRT<sup>1</sup>, Nicole Marques, MD<sup>1</sup>, Richard Voigt, MSE<sup>1</sup>, Hao Ying, PhD<sup>2</sup>, Michael Kinsky, MD<sup>1</sup>, Perenlei Enkhbaatar, MD, PhD<sup>1</sup>, and George Kramer, PhD<sup>1</sup>

<sup>1</sup> Resuscitation Research Laboratory, Dept. of Anesthesiology, UTMB, Galveston, TX

<sup>2</sup> Department of Electrical & Computer Engineering, Wayne State University, Detroit, MI

**MHSRS-1091 Poster Session: 2 - Poster # 200**

**A descriptive analysis of trauma patients evacuated by Critical Care Air Transport Team (CCATT) out of the combat theater (2007-2013): a preliminary report**

Vikhyat Bebart, Lt Col, MC<sup>1,2</sup>, Alicia Ervin, RN BSN<sup>1</sup>, Alejandra Mora, BS<sup>1</sup>, Victoria Ganem, RN BSN<sup>1</sup>, Nina Nnamani, MS<sup>1</sup>, Toni Vargas, PA-C<sup>1</sup>

<sup>1</sup> Air Force En Route Care Research Center

<sup>2</sup> San Antonio Military Medical Center



**MHSRS-1155 Poster Session: 2 - Poster # 201**

**Performance of Oxygen Concentrators at Altitude and Temperature Extremes**

Thomas Blakeman, MS<sup>1</sup>, Dario Rodriguez, MS<sup>2</sup>, Tyler Britton <sup>2</sup>, Travis Gerlach, MD<sup>2</sup>, Richard Branson, MS<sup>1</sup>

<sup>1</sup> University of Cincinnati Department of Surgery

<sup>2</sup> United States Air Force, CSTARS Cincinnati

# 2014 MHSRS POSTER PRESENTATIONS - POSTER SESSION HBO2

**THE FOLLOWING POSTERS WILL BE PRESENTED AT THE LUNCHTIME  
BREAKOUT SESSION: HYPERBARIC OXYGEN THERAPY FOR MILD  
TRAUMATIC BRAIN INJURY ON TUESDAY, 19 AUG**

**MHSRS-976 Poster Session: 2 - Poster # 70 & HBO2**

**Progress of the Brain Injury and Mechanisms of Action of Hyperbaric Oxygen (HBO2) for Persistent Post-Concussive Symptoms after Mild Traumatic Brain Injury (BIMA) Study**

Lindell Weaver, PhD<sup>1,2</sup>, Austin Chhoeu<sup>3</sup>, Anne Lindblad, PhD<sup>4</sup>, Susan Churchill<sup>1</sup>, Steffanie H Wilson, PhD<sup>4</sup>

<sup>1</sup> Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital;

<sup>2</sup> University of Utah School of Medicine, Salt Lake City

<sup>3</sup> US Army Medical Materiel Development Activity (USAMMDA), Hyperbaric Oxygen Research Program  
Management Office (HBO2 PMO), Fort Detrick, MD

<sup>4</sup> The EMMES Corporation, Rockville, MD

**MHSRS-1077 Poster Session: 2 - Poster # 73 & HBO2**

**Adaptation, Heart-Rate Variability And Autonomic Nervous System Function In Soldiers With Sequelae Of Mild Traumatic Brain Injury**

Susan Mirow, PhD MD<sup>1</sup>, Steffanie H Wilson, PhD<sup>2</sup>, Wayne C Spelius, Major USAF ret<sup>3</sup>, Lindell W Weaver, MD<sup>4,5</sup>,  
Susan K Churchill, APRN-NP CHRNC<sup>4</sup>

<sup>1</sup> Department of Psychiatry, University of Utah School of Medicine, Salt Lake City, UT

<sup>2</sup> The EMMES Corporation, Rockville, MD

<sup>3</sup> United States Air Force

<sup>4</sup> Hyperbaric Medicine Department, Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital,  
Salt Lake City, UT

<sup>5</sup> University of Utah School of Medicine, Salt Lake City, UT

**MHSRS-813 Poster Session: HBO2**

**Thermoneutral water immersion and hyperbaric oxygen do not alter cortisol regulation**

Betsy Conaty

**MHSRS-1072 Poster Session: HBO2**

**Characterization Of Baseline Eeg Abnormalities In The Brain Injury And Mechanisms Of Action Of Hyperbaric Oxygen (Hbo2) For Persistent Post-Concussive Symptoms After Mild Traumatic Brain Injury**

Dr. John Foley



**MHSRS-1106 Poster Session: HBO2**

**Characterization Of Baseline Heart Rate Variability (Hrv) Within The “Brain Injury And Mechanisms Of Action Of Hyperbaric Oxygen (Hbo2) For Persistent Post-Concussive Symptoms After Mild Traumatic**

Steffanie H Wilson, PhD<sup>1</sup>, Susan Mirow, MD, PhD<sup>2</sup>, Lindell K Weaver, MD<sup>3,4</sup>, Susan Churchill, NP<sup>3</sup>

<sup>1</sup> The EMMES BRAIN INJURY (MTBI)” STUDY (BIMA) Corporation, Rockville, MD

<sup>2</sup> Department of Psychiatry, University of Utah School of Medicine, Salt Lake City, UT

<sup>3</sup> Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital

<sup>4</sup> Department of Medicine, University of Utah School of Medicine, Salt Lake City, UT

**MHSRS-418 Poster Session: HBO2**

**Two Consecutive Days Of 6-Hour Dives Influences Balance Control**

Matthew W. Wittstein<sup>1</sup>, Stephen M. Glass<sup>1</sup>, Christopher K. Rhea<sup>1</sup>, Scott E. Ross<sup>1</sup>, F. Jay Haran<sup>2</sup>,  
Barbara E. Shykoff<sup>2</sup>, John P. Florian<sup>2</sup>

<sup>1</sup> University of North Carolina at Greensboro, Greensboro, NC

<sup>2</sup> Navy Experimental Diving Unit, Panama City, FL

**MHSRS-985 Poster Session: HBO2**

**A Composite Outcome Measure For Mild Traumatic Brain Injury In A Hyperbaric Oxygen Clinical Trial**

Susan Churchill, NP<sup>1,2</sup>, R. Scott Miller, MD<sup>3</sup>, Kayla Deru<sup>1,2</sup>, Lindell Weaver, MD<sup>1,2,4</sup>

<sup>1</sup> Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT

<sup>2</sup> Intermountain LDS Hospital, Salt Lake City UT

<sup>3</sup> U.S. Army Medical Materiel Development Activity, Ft. Detrick, MD

<sup>4</sup> Department of Medicine, University of Utah School of Medicine, Salt Lake UT

**MHSRS-990 Poster Session: HBO2**

**Simple And Procedural Reaction Time (Anam) For Mild Traumatic Brain Injury  
In A Hyperbaric Oxygen Clinical Trial**

Susan Churchill, NP<sup>1</sup>, R. Scott Miller MD<sup>3</sup>, Kayla Deru<sup>1,2</sup>, Steffanie Wilson, PhD<sup>4</sup>, Lindell Weaver, MD<sup>1,2,5</sup>

<sup>1</sup> Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT

<sup>2</sup> Intermountain LDS Hospital, Salt Lake City UT

<sup>3</sup> U.S. Army Medical Materiel Development Activity, Ft. Detrick, MD

<sup>4</sup> The Emmes Corporation, Rockville, MD

<sup>5</sup> Department of Medicine, University of Utah School of Medicine, Salt Lake UT



# EXHIBITORS

Join us in the Exhibit Hall (Grand Ballroom) to learn about the latest equipment and services to benefit your research.

Monday, 18 August: 1000–2100 (includes the Assistant Secretary of Defense for Health Affairs Reception from 1900 to 2100)

Tuesday, 19 August: 1000–2000

Wednesday, 20 August: 1000–1600

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[www.carefusion.com](http://www.carefusion.com)

CareFusion is a global corporation serving the health care industry with products and services that help hospitals measurably improve patient care. The company develops market-leading technologies including Alaris® IV infusion pumps, Pyxis® automated dispensing and patient identification systems, AirLife™, AVEA® and LTV® series of ventilators and respiratory products, ChloraPrep® skin prep products, MedMined™ services for infection data mining surveillance, V. Mueller® and Snowden-Pencer® surgical

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## CHINOOK MEDICAL GEAR

17

[www.chinookmed.com](http://www.chinookmed.com)

Chinook is a leading provider of custom trauma medical solutions serving Military, Government and Corporate requirements. Using the latest technologies and innovation, Chinook specializes in custom medical kits and skill set modules geared for extreme conditions and critical missions. Established in 1992, Chinook is a veteran-owned, small-business committed to exceptional customer service. Contact; Peggy Leighton, Military Account Manager, [peggy@chinookmed.com](mailto:peggy@chinookmed.com)

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## COMBAT MEDICAL SYSTEMS

62

[www.combatmedicalsyste.ms.com](http://www.combatmedicalsyste.ms.com)

Combat Medical Systems (CMS) was founded in February of 2008 by a team of experienced military medical personnel and industry product specialists. Our primary goal is to simplify tactical medicine in order to decrease pre-hospital mortality. We do this by providing and developing innovative products that simplify tactical medical care at every level.





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## CORELEADER BIOTECH CO., LTD.

75

[www.coreleaderbio.com](http://www.coreleaderbio.com)

Having seen Action of Valor & Lone Survivor, we promote harder HEMO items because they save lives. Our buddy in battle field deserves best hemostatic item to save them. MFG in Taiwan, our two chitosan based products stanch lethal bleeding fast. 1) HEMO-fiber, non-woven fabric, is for traumatic bleeding control and burns. With chitosan anti-microbial feature, it has a benefit to reduce sepsis risk. 2) HEMO-bandage, leno weave gauze, has stronger structure than non-woven or coated products.

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## COVIDIEN

51

[www.covidien.com](http://www.covidien.com)

Covidien offers a comprehensive product portfolio that is utilized both inside and outside of hospital environments. The Respiratory and Monitoring Solutions division includes: BIST™, INVOS™, Mallinckrodt™, Microstream®, Nellcor, Newport™, Puritan Bennett, Shiley™, Vital Sync™, and Zephyr. [www.covidien.com](http://www.covidien.com) Online Education offered on Covidien Technologies - [www.covidien.com/pace](http://www.covidien.com/pace)

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## CYTOSORBENTS CORPORATION

36

[www.cytosorbents.com](http://www.cytosorbents.com)

CytoSorbents Corporation is an emerging critical care immunotherapy company working to save lives using blood purification to control deadly inflammation. Its purification technology is based on biocompatible, highly porous polymer beads that can actively remove toxic substances from blood and other bodily fluids by pore capture and adsorption. CytoSorbents powerful, patented, platform purification technology can remove unwanted disease causing substances from blood and physiologic fluids to i

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## DEFENSE CENTERS OF EXCELLENCE FOR PSYCHOLOGICAL HEALTH AND TRAUMATIC BRAIN INJURY

20

[www.dcoe.mil](http://www.dcoe.mil)

The mission of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) is to improve the lives of our nation's service members, families and veterans by advancing excellence in psychological health and traumatic brain injury prevention and care. DCoE strives to be the trusted source and advocate for psychological health and traumatic brain injury knowledge and standards for the Department of Defense, and profoundly improve the system of care.

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## EDAPTIVE COMPUTING, INC.

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[www.edaptive.com](http://www.edaptive.com)

ECI solutions result in improvements to Business Processes (technology transition, acquisition, etc.) through better understanding of the "As-Is" process, optimal "To-Be" process configuration, optimal resource allocation, real-time decision support, and more

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## EMIT CORPORATION

38

[www.emitcorp.com](http://www.emitcorp.com)

EMIT Corporation designs, develops, manufactures, and sells devices for the treatment and prevention of hypothermia caused by traumatic, environmental, and procedure related occurrences. HypothermX® HX100 and HypothermX® LG models are patent protected, FDA cleared, fast, simple, portable, compact, light (HX100 - 2.8 lbs & LG - 1.0 lbs), fully disposable, long-term use IV fluid and blood warming systems fueled with Isobutane/Propane, thereby eliminating the need for generated power to operate.



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## ESSEX INDUSTRIES

65

[www.essexindustries.com](http://www.essexindustries.com)

Essex has extensive experience in the development and production of military medical oxygen life and ground support systems. The Battlefield Oxygen Sustainment System “BOSS”; was designed specifically as a family of medical devices for the US Air Force Special Services to generate, store, fill and deploy liquid oxygen (LOX). Essex also has a Cooperative Research and Development Agreement (CRADA) in place with USAMRMC/USAMMA for the purpose of evaluating our portable LOX life support systems.

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## FLORIDA ATLANTIC UNIVERSITY

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[www.fau.edu](http://www.fau.edu)

Florida Atlantic University has 10 colleges that cover a wide array of research disciplines, including medicine, science, engineering and oceanographic studies. FAU’s health-related research strengths include neuroscience, aging and infectious diseases. The University has joint research programs with The Scripps Research Institute, the Vaccine and Gene Therapy Institute, the Torrey Pines Institute for Molecular Studies and the Max Planck Florida Institute for Neuroscience.

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## GE GLOBAL RESEARCH

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[www.geglobalresearch.com](http://www.geglobalresearch.com)

GE Global Research is one of the world’s largest and most diversified industrial research organization. Headquartered in Niskayuna, New York, the center is made up of 10 laboratories organized by scientific disciplines, all focused on leveraging our advancements across all of GE’s businesses. GE Global Research has many programs that support the DOD mission for combat casualty care, including low cost MR , TBI diagnosis and ubiquitous sensors.

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## GE HEALTHCARE

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[www.gehealthcare.com](http://www.gehealthcare.com)

GE will feature our new Vscan with Dual Probe Handheld Ultrasound System. A handheld, pocket-sized visualization tool, Vscan with Dual Probe supports efficient workflow across your health system to help enable time and cost savings. Combining a linear-array transducer and a phased-array transducer to deliver both deep and shallow views, the first of its kind, 2-in-1 probe is always connected and ready to scan. Acquire clinical information right on the spot without swapping probes mid-exam.

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## H&H MEDICAL CORPORATION

41

[www.gohandh.com](http://www.gohandh.com)

H&H Medical Corporation is one of the leading providers of emergency tactical trauma products to the U.S. military. Our products are in every first aid kit in field today. From the Bolin Chest Seal to the H-Bandage and PriMed Compressed Gauze, H&H medical leads the way in providing proven life-saving solutions.

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## HEMCON MEDICAL TECHNOLOGIES, INC.

71

[www.hemcon.com](http://www.hemcon.com)

HemCon, founded in 2001, develops, manufactures, and markets innovative technologies for hemostatic devices for the control of bleeding resulting from trauma or surgery. HemCon products are designed for use by military and civilian first responders as well as medical professionals in hospital and clinical settings where control of bleeding are of critical importance.

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## HENRY M. JACKSON FOUNDATION FOR THE ADVANCEMENT OF MILITARY MEDICINE, INC.

22

[www.hjf.org](http://www.hjf.org)

HJF is a not-for-profit organization dedicated to advancing military medicine. HJF answers the needs of the military medical community with a full range of services that allow researchers and clinicians to maintain their scientific focus and accomplish their research goals effectively and efficiently. Our services include proposal development, program management, research administration, personnel recruitment and more. A pro-active problem solver, HJF finds solutions for its valued clients.

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## IMPACT INSTRUMENTATION, INC.

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[www.impactii.com](http://www.impactii.com)

Impact has been participating at MHSRS for many years. As a manufacturer of portable ventilators including EMV+ and 754M, both currently in use by all branches of the military, and other government agencies. Additional products include portable aspirators 326M, 325M, 321M, 308M and mounting systems such as SMEED, CCLAW and EMLAB. Impact has been producing medical devices in the USA to withstand the rigors of combat and operation in austere environments for over 35 years .

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## INFRASCAN, INC.

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[www.infrascanner.com](http://www.infrascanner.com)

The Infrascanner can help reduce the risk of brain damage following head trauma by facilitating the early detection and timely management of developing hematomas. Infrascanner uses non-invasive, near-infrared light to detect blood within 2.5 cm of the brain surface. The device is easy to use, portable, quantitative and FDA cleared.

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## INNOVATIVE TRAUMA CARE

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[iTraumaCare.com](http://iTraumaCare.com)

The iTClamp™ is a hemorrhage control device that can be used in the extremities, axilla, inguinal and scalp. The device seals the edges of a wound closed to create a stable clot to mitigate further blood loss until the wound can be surgically repaired. Pre-clinical trials showed the iTClamp to be superior to wound packing in terms of patient survival, survival time and total blood loss. Applied in seconds with minimal pain to the patient, the iTClamp is ideal for emergency medical personnel.

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## JOHNS HOPKINS MILITARY & VETERANS HEALTH INSTITUTE

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[www.jhmvhi.jhu.edu](http://www.jhmvhi.jhu.edu)

The mission of the Johns Hopkins Military & Veterans Health Institute is to apply the collective resources of Johns Hopkins to solve the health and healthcare problems of service members, veterans and their families through research, consultation, education, and direct healthcare. Our vision for the future is to create enduring, mutually-beneficial partnerships with the Military Health System and the Department of Veterans Affairs.

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## JOURNAL OF SPECIAL OPERATIONS MEDICINE

GRAND BALLROOM FOYER

[www.jsomonline.org](http://www.jsomonline.org)

The JSOM's unwavering mission is to promote the professional development of Special Operations medical personnel by providing a forum for the examination of the latest advancements in unconventional, operational, and combat casualty care medicine. Because the quality of the articles published by this community of highly trained professionals is so cutting edge, the Journal of Special Operations Medicine is highly searched and recognized through the National Library of Medicine's PubMed.

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## KCI

32

[www.kci1.com](http://www.kci1.com)

Company Description: KCI is a leading global medical technology company devoted to changing the practice of medicine with solutions that speed healing, reduce complications, and improve patient lives. KCI therapies have been shown in more than 40 randomized controlled trials and 900 peer-reviewed articles to help reduce length-of-stay and cost-of-care in hospitals.



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## KERECIS LIMITED

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[www.kerecis.com](http://www.kerecis.com)

Kerecis has developed the unique, patent-pending Kerecis™ Omega3 fish-skin acellular dermal matrix transplantation technology, where complete acellular fish skin is used for tissue regeneration by transplantation. The Kerecis Omega3 transplantation technology is used to reconstruct the skin in wounds, for hernia repair, breast reconstruction, dura restoration and tissue regeneration following trauma. Other tissue-transplant products are based on tissues of human and porcine origin.

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## KFORCE GOVERNMENT SOLUTIONS - TRAUMAFX

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[www.traumafx.net](http://www.traumafx.net)

Kforce Government Solutions, Inc. (KGS) TraumaFX © produces powerfully realistic, all terrain patient simulators, such as the award-winning Multiple Amputation Trauma Trainer (MATT) ©, HEMO, and AirwayPlus. TraumaFX © products employ state-of-the-art special effects, movement, and instant validation to provide Military, Medics, 68Ws, 18Ds, and First Responders with the most comprehensive, effective Tactical Combat Casualty Care and Continuum of Care training experience.

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## LABANSWER GOVERNMENT, LLC

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[www.labanswer.com](http://www.labanswer.com)

Pharma's top 10, biotechs, CRO's, Army Navy, AF, NIH, CDC, FDA and others utilize LabAnswer to help define their informatics strategy, rationalize their application portfolios, and execute on those strategies for clinical trials, vaccine R&D, bio-banking pre-clinical research, etc. LabAnswer focuses on clinical research and Laboratory Informatics and brings expertise that spans all major lab and research S/W applications. LabAnswer has the ability to deliver on everything across the entire SDLC.

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## LAERDAL MEDICAL

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[www.laerdal.com/us](http://www.laerdal.com/us)

Laerdal Medical is a worldwide leading provider of training, educational and therapy products for lifesaving and emergency medical care. Laerdal offers various products and services for simulation, AHA/ECC medical education, basic and advanced life support and self-directed learning products supporting EMS, hospital and military healthcare providers.

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## LEIDOS HEALTH

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[www.Leidos.com](http://www.Leidos.com)

Leidos Health Solutions Group includes more than 3,000 talented employees providing services and solutions in life sciences, information technology (IT), and public health, to commercial and government customers. We contribute to healthcare projects of national and international importance, drawing upon our extensive knowledge of bio-medical research and development. The Life Sciences Operation has supported USAMRMC and its laboratories for more than 30 years.

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## MARKETING ASSESSMENT, INC.

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[www.marketingassessment.com](http://www.marketingassessment.com)

Preserving the ATACCC/MHSRS mission of introducing new and innovative technology, MAI is proud to introduce through Abbott Labs the I-Stat/ Piccolo deployable system and the first commercially available carbon nanotube ballistic material for a broad range of applications. Additional products are the REEL Splint; the ChillBuster Hypothermia Blanket; and MicrobeCare XLP Anti-microbial to effectively control bacteria, fungi, algae and yeast on a wide variety of treated materials and substrates.

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## MASIMO

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[www.masimo.com](http://www.masimo.com)

Masimo is a global medical technology company responsible for the invention of award-winning noninvasive technologies, medical devices, and sensors that are revolutionizing patient monitoring, including Masimo SET®, Masimo rainbow® Pulse CO-Oximetry™, noninvasive and continuous hemoglobin (SpHb®), acoustic respiration rate (RRa™), Masimo Patient SafetyNet™, SedLine® (EEG-based) Brain Function Monitors, and Phasein™ respiratory monitors.



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## MIMEDX

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[www.mimedx.com](http://www.mimedx.com)

EpiFix® is a human amniotic allograft tissue uniquely processed through the Company's proprietary PURION® Process. EpiFix® dehydrated human amnion/chorion membrane (dHACM) can reduce inflammation and reduce scar tissue formation for enhanced healing. With a variety of sizes available, EpiFix® minimizes graft waste. The Company's PURION® Process combines cleaning, dehydration and sterilization, making EpiFix® a safe, sterilized tissue that may be stored at ambient conditions for up to 5 years.

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## MOLECULIGHT INC

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[www.moleculight.com](http://www.moleculight.com)

MolecuLight has developed a handheld optical imaging device, to instantly detect, visualize, and analyze the presence and distribution of bacteria. The first application of this technology will be in the global wound care market, where there is an urgent unmet medical need where MolecuLight can significantly improve outcomes by providing real-time bacterial information. This innovative and easy to use device allows for real-time bacteria imaging and procedural guidance at the point of care.

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## NEURO KINETICS, INC.

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[www.neuro-kinetics.com](http://www.neuro-kinetics.com)

For 30 years, Neuro Kinetics, Inc. (NKI) has supplied innovative and comprehensive neuro-otologic diagnostic tools to medical professionals. I-Portal® is at NKI's technologic core, delivering precise, real-time measurements of the eye's horizontal, vertical, torsional, conjugate and pupil reflexes. The I-Portal® NOTC is a TRL 9 device with installations in 36 DOD and VA hospitals. I-Portal devices are in ongoing DOD clinical trials for mTBI assessment modeling and validation.

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## NEUROWAVE SYSTEMS INC

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[www.neurowavesystems.com](http://www.neurowavesystems.com)

NeuroWave develops, manufactures, and markets products using advanced signal processing of brain waves for Anesthesia, Critical Care and Military Medicine applications, to improve patient outcome and quality of life. The AutoTIVA™ is being developed for the Army as an autopilot for anesthesia and sedation to help bring the benefits of Total Intravenous Anesthesia to injured warfighters. The SeizTBI™ is a disposable and compact brain monitor for rapid TBI screening at the Point Of Injury.

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## NORTH AMERICAN RESCUE LLC

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[www.narescue.com](http://www.narescue.com)

North American Rescue, a premier developer and manufacturer of innovative medical/rescue solutions, is dedicated to decreasing preventable death in the hostile and/or austere conditions of combat and the tactical environment. Using real-time data from today's battlefield, our product line addresses the full spectrum of tactical medicine ranging from massive hemorrhage control, airway/respiration management and circulation to hypothermia prevention, patient evacuation and training.

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## NUMASK, INC.

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[www.numask.com](http://www.numask.com)

NuMask, Inc designs and produces next generation mask ventilation products. Including its patented IntraOral Mask (IOM®) and OPA. The mask's unique intraoral placement enables 100% seals and allows single providers to ventilate with ease. This device is 1/10 the size of common masks and more durable. Facial trauma, facial features and hair are no longer problematic. Our Oropharyngeal Airway (OPA) is the only sizable/trimmable device in the market. NuMask also produces cutting edge CPR masks.

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## OFFICE OF NAVAL RESEARCH

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[www.onr.navy.mil](http://www.onr.navy.mil)

The Office of Naval Research coordinates, executes and promotes science and technology programs for the U.S. Navy and Marine Corps.





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## OPERATIVE EXPERIENCE INC

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[www.operativeexperience.com](http://www.operativeexperience.com)

Operative Experience Inc is on a mission to revolutionize surgical and pre-hospital training. Using medical simulators with unprecedented anatomical and surgical fidelity within a rigorous experiential instructional paradigm, OEI will reduce training costs while increasing training effectiveness and retention. OEI is dedicated to applying this technology to reduce combat and civilian surgical mortality, and to provide humanitarian support to third world countries with limited medical resources

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## OTOSIM INC.

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[www.OtoSim.com](http://www.OtoSim.com)

OtoSim Inc. offers Otoscopy and Ophthalmoscopy training & simulation systems. Through hands-on simulation, extensive content, and enhanced interactivity, OtoSim training systems enable trainees to quickly & effectively develop confidence in their practical otoscopy and ophthalmoscopy skills to excel in the clinical environment. OtoSim helps bridge the gap between textbook learning and the clinic.

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## PACIFIC CONSOLIDATED INDUSTRIES

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[pic-intl.com](http://pic-intl.com)

PCI manufactures ruggedized on-site liquid and gaseous oxygen and nitrogen generators for a variety of markets; including Military & Commercial marketplace supporting Aviation and Medical markets. Visit our website at [www.pcigases.com](http://www.pcigases.com).

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## PANAKEIA, LLC

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[www.panakeiausa.com](http://www.panakeiausa.com)

Panakeia specializes in marketing & distributing innovative medical products to the Military Health System. Panakeia's focus is to connect & optimize new innovations for companies wanting to enter the VA, DoD & Military Markets. Panakeia's innovations include SAROS Oxygen System, IntuBrite's Hypervualization Laryngoscopes, XStat, XGauze, TX Tourniquets, AirWrap by RevMedX, sam Ultrasound System for pain management by Zetroz. P: 202-656-8848, E: [info@panakeiausa.com](mailto:info@panakeiausa.com), [www.panakeiausa.com](http://www.panakeiausa.com)

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## PERSYS MEDICAL

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[www.ps-med.com](http://www.ps-med.com)

PerSys Medical specializes in providing the highest quality innovative technologies and products to meet medical challenges for military, law enforcement, homeland security, EMS, wilderness medicine agencies and governments worldwide by responding to the growing demand for life-saving products for wound care, hypothermia prevention and care, resuscitation, airway management, hemorrhage control, and more.

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## PHILIPS HEALTHCARE

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[www.usa.philips.com/healthcare](http://www.usa.philips.com/healthcare)

Philips Healthcare is dedicated to providing solutions designed around the needs of clinical care teams and patients by combining our unique clinical expertise with human insights. For the military, we provide a breadth and depth of products for each echelon of care from battlefield to bedside, along with comprehensive training and integrated service solutions.

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## POSITIVEID CORPORATION

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[www.positiveidcorp.com](http://www.positiveidcorp.com)

PositiveID Corporation develops molecular diagnostic systems for bio-threat detection and rapid medical testing. Its M-BAND (Microfluidic Bio-agent Autonomous Networked Detector) system, developed under contract with the U.S. DHS Science & Technology directorate, autonomously analyzes air samples to detect biological airborne threats in the form of bacteria, viruses, and toxins. PositiveID's Firefly Dx is handheld system that delivers results in minutes at the point of need using TaqMan(R) PCR.





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## QUIKLOT COMBAT GAUZE

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[www.z-medica.com](http://www.z-medica.com)

Z-Medica is the innovator and manufacturer of QuikClot® products for hemostasis. QuikClot® hemostatic dressings, indicated for topical use, are impregnated with kaolin, a naturally occurring mineral, which is a proven initiator of the body's natural coagulation cascade fostering active hemostasis. This technology has been tested by both the US Army's Institute for Surgical Research & the Naval Medical Research Center. As a result, QuikClot® was selected as the number one choice hemostatic agents

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## RDT

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[www.rdtltd.com](http://www.rdtltd.com)

RDT specialise in the design and manufacture of medical devices, including pre-hospital care vital signs monitors. Specialist technologies include compact and highly integrated vital signs monitors for both medical professional and non-medically trained users, as well as intermittent users. The award-winning Tempus system provides innovative, easy to use and reliable medical device solutions to help manage medical incidents for the military, civilian pre-hospital market and remote locations.

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## REX EMS, LLC

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[www.rexems.com](http://www.rexems.com)

The Rex Rapid Extraction Stretcher is the fastest and most efficient device on the market for the rapid extraction of patients, from point of injury to safety, regardless of distance. The device is a towable, collapsible, wheeled stretcher that can be operated by one person to safely and quickly evacuate an injured or incapacitated person weighing up to 400 lbs. Made entirely in the U.S.A.

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## SHORELAND, INC.

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[www.shoreland.com](http://www.shoreland.com)

Shoreland Travax, an online database of preventive and travel health information, keeps medical professionals up to date on current events and best practices in global and operational medicine. The site provides concise, constantly updated, location-specific, expert-vetted summaries of health and safety concerns and necessary preventive measures (including MILVAX requirements) for 237 countries and territories. Information is drawn from a wide variety of medical, public health, foreign service.

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## SIERRA NEVADA CORPORATION

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[www.sncorp.com](http://www.sncorp.com)

Sierra Nevada Corporation (SNC) is a world-class prime systems integrator and electronic systems provider known for its rapid, innovative, and agile technology solutions. Fast-growing and widely diversified, SNC is a high-tech electronics, engineering, and manufacturing corporation that continues to expand our impressive portfolio of capabilities, programs, products and services.

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## SMITH & NEPHEW

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[www.smith-nephew.com](http://www.smith-nephew.com)

Smith & Nephew's Advanced Wound Management business offers a range of products from initial wound bed preparation through to full wound closure. There are also products for the treatment of wounds such as burns and from invasive surgery, as well as as pressure sores, diabetic foot ulcers and venous leg ulcers. With our wide portfolio of wound care solutions we focus on addressing the human and economic cost of wounds to deliver better outcomes for patients and budgets alike.



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## SYNC THINK INC.

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[www.syncthink.com](http://www.syncthink.com)

Sync Think is currently integrating its intellectual property, technology platform, and algorithm development process to create robust, portable devices intended to be deployed in military and athletic environments.

Sync Think's technology is supported by more than a decade of research and clinical studies. There is strong scientific evidence that Sync Think eye movement tests are an accurate metric of the functional integrity of brain systems involved in attention focus.

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## TACTICAL DEFENSE MEDIA/ COMBAT & CASUALTY CARE

GRAND BALLROOM FOYER

[www.tacticaldefensemedia.com](http://www.tacticaldefensemedia.com)

Combat & Casualty Care focuses on the latest technology, techniques and training in tactical combat casualty care (T3C). Essential for both field medics and EMS personnel, readers of C&CC; learn the latest on aiding trauma victims in the 'Golden Hour' and beyond.

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## TELEFLEX

67

[www.Teleflex.com](http://www.Teleflex.com)

T.A.L.O.N.™ (Tactically Advanced Lifesaving Intraosseous Needle) One Needle, 7 Site Tactical Advantage

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## TEM SYSTEMS, INC

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[www.rotem-usa.com](http://www.rotem-usa.com)

ROTEM® delta, a whole blood Hemostasis Analyzer has 5 pre-packaged assays to look at the viscoelastic properties of the clot in "real-time." The temograms produced provide clinical information that along with other relevant laboratory data and clinical impression can assist physicians with better blood management decisions for their patients.

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## THE GENEVA FOUNDATION

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[www.genevausa.org](http://www.genevausa.org)

The Geneva Foundation is a non-profit organization that supports and advances innovative medical research and excellence in education within the U.S. military. We build enduring partnerships dedicated to the health and well-being of service members, their families, and the global community

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## THORNHILL RESEARCH INC.

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[www.thornhillresearch.com](http://www.thornhillresearch.com)

Thornhill is a medical device innovator. Our MOVES® system is the world's first completely integrated portable intensive care unit (ICU) that eliminates the need for pressurized oxygen tanks with its built-in oxygen concentrator.

In addition to oxygen, MOVES® has a ventilator, suction system, and complete patient monitor onboard. MOVES® is over 50% smaller and lighter than current medevac equipment, and can be connected to any patient stretcher for easy transport. MOVES® is rugged and compact and works extreme environments. MOVES® is FDA cleared and CE Marked.

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## UNIVERSITY OF PITTSBURGH MCGOWAN INSTITUTE FOR REGENERATIVE MEDICINE AND CENTER FOR MILITARY MEDICINE RESEARCH

73

[www.mcgowan.pitt.edu](http://www.mcgowan.pitt.edu) and [www.cmmr.pitt.edu](http://www.cmmr.pitt.edu)

McGowan Institute for Regenerative Medicine serves as a single base of operations for the University's leading scientists & clinical faculty working to develop tissue engineering, cellular therapies, medical devices & artificial organs. Center for Military Medicine Research's goal is develop new research themes & promote collaboration among investigators in the Health Sciences & related disciplines that lead to significant scientific & clinical advances that support the interests of the DoD.



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## US ARMY MEDICAL RESEARCH AND MATERIEL COMMAND OFFICE OF RESEARCH AND TECHNOLOGY APPLICATIONS

19

[technologytransfer.amedd.army.mil](http://technologytransfer.amedd.army.mil)

USAMRMC is the primary developer of biomedical technology, including drugs, vaccines, devices and medical information technology for the promotion and maintenance of the health and well being of military personnel. The USAMRMC Office of Research and Technology Applications (ORTA) otherwise known as the Technology Transfer Office coordinates all intellectual property licensing on behalf of all USAMRMC's subordinate laboratories from the federal sector to nonfederal parties.

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## VACCINE & GENE THERAPY INSTITUTE OF FLORIDA (VGTI FLORIDA)

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[www.vgtifl.org](http://www.vgtifl.org)

The Vaccine & Gene Therapy Institute of Florida (VGTI Florida) is a non-profit, independent biomedical research institute dedicated to the discovery and development of vital therapies to prevent, treat and cure a broad range of debilitating and life-threatening illnesses. VGTI Florida is prioritizing the advancement of translational research in addressing urgent unmet needs in the areas of cancers, infectious disease, cardiovascular disease and neurodegenerative disorders.

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## VIRTUAL IMAGING, INC.

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[www.virtualimaging-fl.com](http://www.virtualimaging-fl.com)

Virtual Imaging, Inc., located in Boca Raton, Florida, is a wholly owned subsidiary of Canon U.S.A., Inc. Combining broad experience, extensive resources, and broad business functions, Virtual Imaging collaborates with hospitals, imaging centers, private physician offices, government organizations, and veterinary practices to help them meet their challenges in delivering quality, affordable patient care. Focused on providing high-quality, productivity-enhancing digital radiography (DR) solutions

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## VIVONICS, INC.

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[www.vivonics.com](http://www.vivonics.com)

**The charter of Vivonics is to develop innovative technologies that improve or maintain health, or that optimize the effectiveness of humans in complex systems, from the initial concept through to viable products. We have several projects in development, most of which are medical devices. Some of our medical simulation and training products are already available for sale. Vivonics also has patented technology in the development of DNA Aptamer affinity molecules for diagnostics and therapeutics.**

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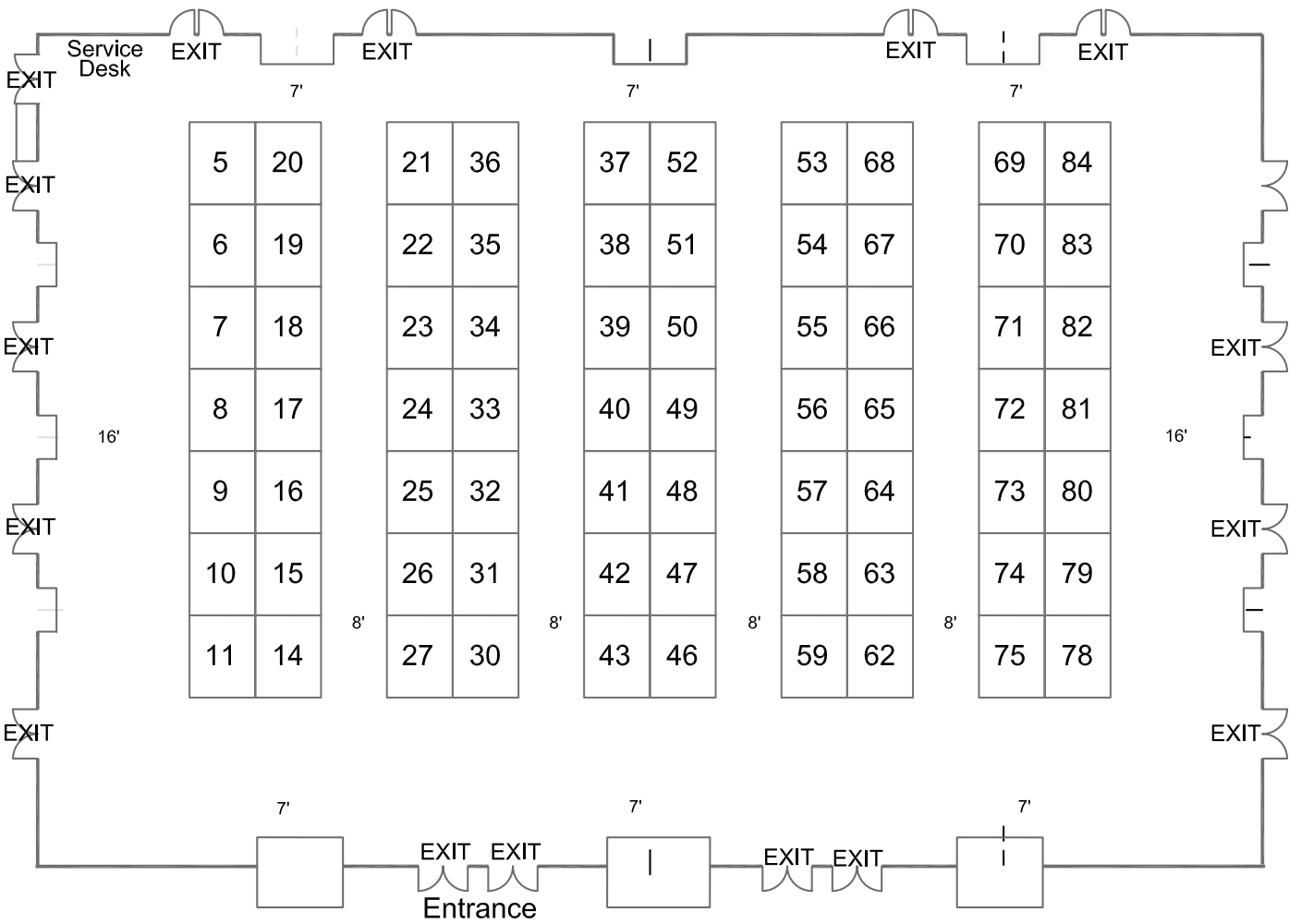
## ZOLL MEDICAL CORPORATION

43

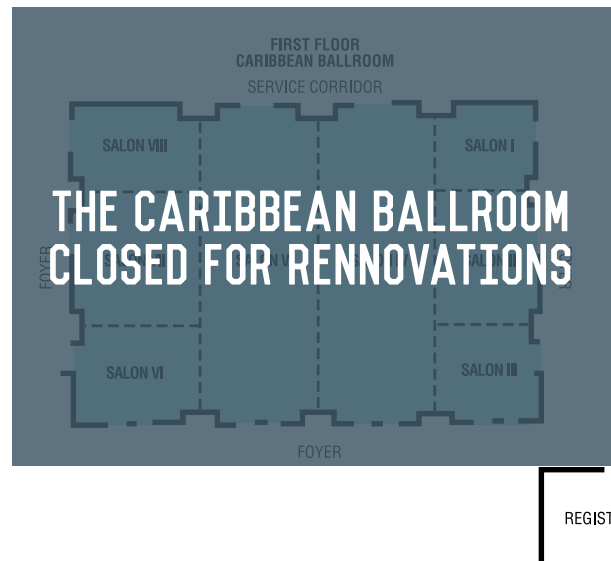
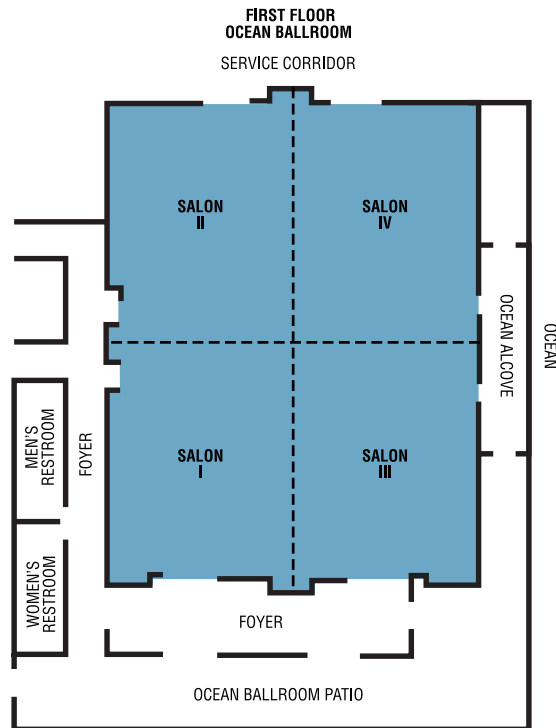
[www.zoll.com](http://www.zoll.com)

ZOLL Medical Corporation, a leader in medical devices and software solutions, helps military professionals manage, treat and save lives while also increasing operational efficiency. ZOLL offers innovative products for defibrillation, circulation, pacing, temperature management, fluid resuscitation and information management that help improve outcomes from the battlefield to the hospital bed.

# EXHIBIT FLOOR MAP



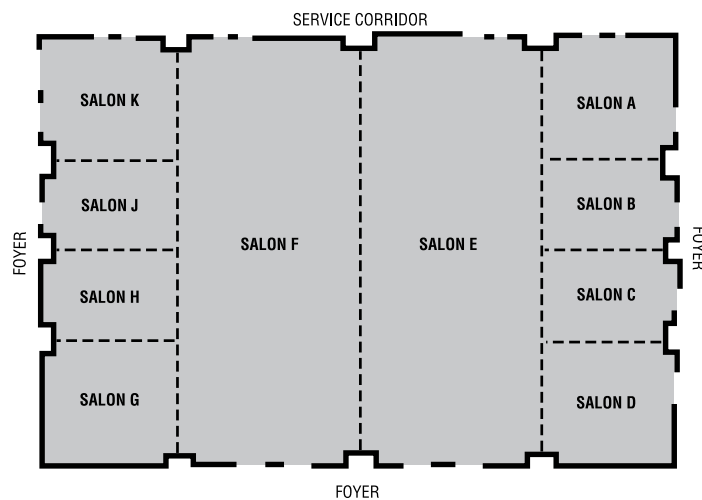
# ROOM MAPS



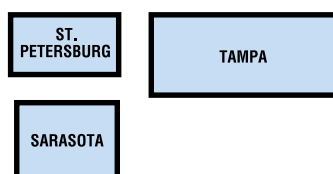
## SECOND FLOOR MEETING ROOMS



## THIRD FLOOR GRAND BALLROOM



## FIFTH FLOOR MEETING ROOMS



# AT A GLANCE AGENDA

	TIME	PRESENTATION TITLE	MEETING ROOM
Monday 18 Aug 2014	0700-0800	Breakfast	Oceanview Terrace/3030 Ocean/ Grand Ballroom
	0800-1000	Plenary Session	Ocean Ballroom
	1000-1030	Break	
	1030-1200	Plenary Session	Ocean Ballroom
	1200-1300	Lunch	Oceanview Terrace/3030 Ocean/ Grand Ballroom
	1300-1500	Breakout Sessions	Ocean Ballrooms 1-4
	1500-1530	Break	
	1530-1730	Breakout Sessions	Ocean Ballrooms 1-4
	1900-2100	Assistant Secretary of Defense (Health Affairs) Reception	Grand Ballroom
Tuesday 19 Aug 2014	0700-0800	Breakfast	Oceanview Terrace/3030 Ocean/ Grand Ballroom
	0800-0930	Plenary Session	Ocean Ballroom
	0930-1000	Break	
	1000-1200	Plenary Session	Ocean Ballroom
	1200-1300	Lunch	Oceanview Terrace/3030 Ocean/ Grand Ballroom
	1300-1500	Poster Session 1	B Level
	1500-1530	Break	
	1530-1730	Breakout Sessions	Ocean Ballrooms 1-4
	1800-2000	Poster Session 2	B Level
Wednesday 20 Aug 2014	0700-0800	Breakfast	Oceanview Terrace/3030 Ocean/ Grand Ballroom
	0800-1000	Plenary Session	Ocean Ballroom
	1000-1030	Break	
	1030-1200	Plenary Session	Ocean Ballroom
	1200-1300	Lunch	Oceanview Terrace/3030 Ocean/ Grand Ballroom
	1300-1500	Breakout Sessions	Ocean Ballrooms 1-4
	1500-1530	Break	
	1530-1730	Breakout Sessions	Ocean Ballrooms 1-4
Thursday, 21 Aug	0700-0800	Breakfast	Oceanview Terrace/3030 Ocean/ Grand Ballroom
	0800-0830	Plenary Session	Ocean Ballroom
	0930-1000	Break	
	1000-1200	Breakout Sessions	Ocean Ballrooms 1-4
	1200-1300	Lunch	Oceanview Terrace/3030 Ocean/ Grand Ballroom
	1300-1530	Breakout Sessions	Ocean Ballrooms 1-4
	1530	MHSRS 2014 Ends	

